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ANNUAL ARCHAEOLOGICAL REPORT, ONTARIO

Volume 8 (New Series) 1997

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Clay pipe from the McConnell segment of the McQueen-McConnell BcHb-31 site, drawn by Kay Hodgins. Submitted by Charles Garrad

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ANNUAL ARCHAEOLOGICAL REPORT, ONTARIO

VOLUME 8 (NEW SERIES) 1997

Dena Doroszenko
Editor

The objective of the New Series of the Annual Archaeological Report, Ontario, is to provide a publication outlet for individuals wishing to publish abstracts describing the results of archaeological fieldwork conducted in the province of Ontario.

These abstracts will be of interest to those members of the general public who want to learn about the prehistoric and historic record of Ontario and will be a valuable reference tool to archaeologists as well as specialists in many other professions.

The Ontario Heritage Foundation seeks to preserve, protect and promote Ontario's archaeological, architectural, cultural, historical and natural heritage for the benefit and enjoyment of present and future generations of Canadians.

A not-for-profit agency of the government of Ontario, the Ontario Heritage Foundation was established by the Province of Ontario in 1968 and operates under the Ontario Heritage Act.

FROM THE EDITOR

This issue is the eighth volume of the *Annual Archaeological Report, Ontario* (AARO), a continuation, in a new form, of a series originally published by the provincial government between 1887 and 1928. This volume contains reports on archaeological work conducted in Ontario in 1996.

Twenty-six essays were submitted for publication and cover a variety of projects in the private and public sectors.

In addition to the essays describing work conducted under provincial licences, staff of the Ontario Region of Parks Canada once again submitted overviews of work conducted in areas of federal jurisdiction.

Layout and design of this volume was conducted in-house this year by the editor in order to reduce overall production costs, and I owe many thanks to Bernice Bradt and Edward Hong at the Foundation for their assistance in this endeavour. I would also like to acknowledge the assistance of my co-operative education students, Marian Gure, Charles Fendly and Alexandra Berlo for the proof-reading and typing services they provided.

Dena Doroszenko

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CONSERVATION ACTIVITIES

ARCHAEOLOGICAL COLLECTIONS REPORT: PARKS CANADA, ONTARIO REGION

SUZANNE PLOUSOS

Archaeological excavation has spanned several decades at many of our National Historic Sites, Parks, and Canals in Ontario. Over the years, artifacts and associated records generated from separate excavations were often disparately stored and inventoried. Artifact analyses were focussed upon specific archaeological objectives with no overall synthesis of the material culture. Through the Threatened Archaeological Collections (TAC) initiative, site assemblages are assessed as cultural resources. The goals of TAC are to address backlogged collections: amalgamate site assemblages, produce complete artifact inventories, assess the resource level, and evaluate the historical significance of collections. Improved storage, identification of material for conservation and for deaccession, and development of site resource collections for heritage presentation purposes are accomplished as work progresses.

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Cornwall, Ontario K6H 6S3

FORT GEORGE

During 1996, Helen Dunlop, project manager, with student assistants completed the amalgamation of collections from Fort George, a War of 1812 site at Niagara-on-the-Lake. Over 162 boxes of material excavated by J. Wilson in 1973/74 and by J. Last in 1983/84 were inventoried. Stephen Lohnes, archaeological collections manager, incorporated Wilson's archaeological records (previously housed in Ottawa) with the more recent excavation records in the Cornwall Resource Centre. Peter Satteliberger began collection assessment of Wilson's material, assigning contexts to seven chronological periods of occupation including:

1) human occupation of the area before the fort construction,
2) Fort George construction in 1796 and military occupation until the eve of the

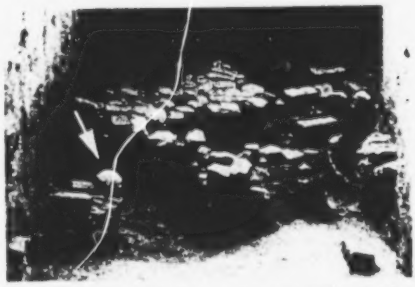

Figure 1. Canon ball in association with a brick feature from the original Blockhouse 1 at Fort George.(19H-122T)

war,

3) the War of 1812 during which the fort was reduced in size and occupied by an American invading force,
4) the reoccupation and rebuilding of Fort George by British forces until *ca.* 1830,
5) military abandonment when the site was inhabited by numerous squatters and caretakers some of who farmed in the old fort from 1837 to the 20th century, and, a brief revival of military use during WW I for a hospital and training camp,
6) Fort George reconstruction in 1937 to 1940,
7) commemoration and operation of Fort George as a National Historic Site.

Given several realignments of defensive entrenchments by the military, farming, and levelling during the reconstruction era, the site strata are extremely complex. Amazingly, a substantial amount of early military building foundations and features remain intact (see Figure 1). Assessment of material culture from redeposited layers or from layers not excavated stratigraphically are based on the material culture context.

Archaeological contexts and artifacts from the 1786 to the end of the War of 1812 periods are assigned level one significance by Parks Canada. This material is from periods commemorated at Fort George and associated resources assume priority for further analysis and conservation. Resources from other periods are deemed level two, and are considered historically significant to the history of Fort George.

Site presentations on Wilson's findings, highlighted contexts having particular relevance to the early Fort George and the War of 1812 periods (see Figure 2). A final report incorporating more recent excavations within the fort and a site resource collection of level one material is scheduled for completion next year.

Figure 2. Horse buried in a realigned trench is thought to be a casualty of the War of 1812.(19H-938T)

PUSKASKWA

Puskaskwa National Park is on the northeast shore of Lake Superior. Continuation of 1995 work on assemblages dating from the Blackduck to historic commercial trapping, logging, and fishing sites saw the completion of a draft report by Helen Dunlop. Also accomplished was the selection of artifacts for a Puskaskwa resource collection to illustrate human adaptation to the changing environment.

Further information about Parks Canada, Ontario Region Collections write to:

Parks Canada
111 Water Street E.
Cornwall, Ontario
K6H 6S3
FAX (613) 938-5959

CONSULTING ACTIVITIES

CATARAQUI ARCHAEOLOGICAL RESEARCH FOUNDATION 1996 CONSULTING PROJECTS

SUSAN M. BAZELY AND THOMAS KRAHN

The Cataraqui Archaeological Research Foundation is a heritage resource management group, which promotes archaeological research and resource management through public education and awareness. After a three year hiatus, the Cataraqui Archaeological Research Foundation has re-entered the consulting field. Associate Archaeologists specialize in historical and marine archaeology. Projects in 1996 included monitoring of two important historic sites, a Stage 1 Assessment and the preparation of a Commemorative Integrity Statement for a National Historic Site.

PINHEY POINT MANOR BiFx-2

The Pinhey Point estate of Horaceville, formerly 800 acres, was developed by Hamnet Kirkes Pinhey in the 1820's.

The first structures built on the site were a log cabin, log house, stone kitchen and stable, while the existing stone manor house was constructed during the late 1820's and early 1830's. The remaining 78 acres and the stone manor house, which has recently undergone restoration, is operated by the City of Kanata. Besides previous localized work by various consultants, the first comprehensive archaeological examination of the Pinhey Point Manor site was conducted by the Cataraqui Archaeological Research Foundation in 1991 (Bazely 1996b).

In June 1996, mechanical excavation associated with the relocation of electrical, gas and water lines on the Pinhey Point site was monitored. The trenching and regrading activities west of the manor house showed that this area had been extensively disturbed by previous construction and restoration projects. No new information came to light at this time.

FORT FRONTENAC BbGc-8

Fort Frontenac was constructed by the French in 1673 in what is now the City of Kingston. Subsequent construction took place in 1675 and through the 1680's. Since the first palisaded outpost, this site, at the mouth of the Great Cataraqui and St. Lawrence Rivers,

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Kingston, Ontario K7K 1N3

Figure 1: Existing streets bi-sect French Fort Frontenac

has been used by both the French and British for a variety of purposes. The upgraded stone fortification was used by the French to control the fur trade until its capture by the British in 1758. After a period of abandonment, the area was settled by British Loyalists at the cessation of the American Revolution. The surviving stone fortifications were demolished after the War of 1812 and the Tête de Pont Barracks were constructed in the 1820s, covering approximately half the French site. The Tête de Pont Barracks housed the Canadian Artillery from 1871 to the mid 1900s. Renamed Fort Frontenac in the 1930s, it is still used today by the Department of National Defence.

The Cataraqui Archaeological Research Foundation conducted major excavations at Fort Frontenac from 1983 to 1985 and again in 1987. Due to the historical importance of this site, archaeological investigation is necessary prior to and during any ground disturbing construction in this immediate area. In the spring and summer of 1996, part of the northwest perimeter wall at Fort Frontenac (Tête de Pont) was removed for restoration. As a component of this project, construction crews also widened the adjacent Ontario Street, which bisects the French fort. Monitoring of mechanical excavation related to these activities was conducted by Sue Bazely and Michelle Eaton(Bazely 1996a).

A 52 metre long trench was mechanically excavated along the roadway between present day Fort Frontenac and Normandy Hall to the north. The north section was part of the inner harbour prior to

land filling, an area revealed to be an extensive waterlogged site (Frontenac Village BbGc-11). A few fragments of butchered bone and construction rubble related to recent service installation were identified. A second trench was excavated 40 metres along the west side of Ontario Street, adjacent to the area of the 1983-5 archaeological excavations. Although no 19th century military features were affected, the trench did pass through the foundations of the north and west sides of the original French fort. A large mortar spread was revealed in the approximate location of the French period stables. Previously identified walls that were expected to have been located, appeared to have been destroyed by prior installation of a gas main, fibre optics cable and sewer pipes, also uncovered during excavation of the new trench.

A backhoe was used to locate the water main to the north of the main entrance to Fort Frontenac before conducting work around the present perimeter wall. The hole was dug in previously undisturbed deposits of French context in the location of the Commandants Quarters. The excavation revealed an exterior wall running east-west and a north-south interior wall. Artifacts recovered include fragments of tin glazed earthenware and bone. Another test pit, using pick and shovel, was dug by construction workers. A ceramic water pipe was located here. This disturbed area produced a variety of artifacts including butchered bone, late 18th and mid 19th century ceramics as well as glass and metal fragments.

The final phase was the removal of a section of the northwest perimeter wall. Although unplanned, demolition was continued beneath ground level to remove a previously installed concrete footing. Portions of an earlier perimeter wall dating to the 1820s and construction of the Tête de Pont were noted during the excavation of this trench, which unfortunately destroyed the earlier wall in the process. The majority of artifacts recovered were late 18th century to early 19th century ceramics. However, there were also artifacts ranging from clay smoking pipes and glass buttons, to a Coca-Cola bottle.

FORT HENRY NATIONAL HISTORIC SITE COMMEMORATIVE INTEGRITY STATEMENT

During the summer of 1996 the Foundation's Associate Archaeologist Sue Bazely participated in the preparation of a significant document. The commemorative integrity statement for Fort Henry National Historic Site identifies the site's nationally significant cultural resources (including archaeological), their historic values, and objectives for their preservation and presentation.. The Core and Working Teams included: Parks Canada specialists in military history, restoration architecture and landscaping, military archaeology, as well as the facilitators and writer; local expertise from Fort Henry, St. Lawrence Parks Commission, Cataraqui Archaeological Research Foundation,, CAB Kingston, Kingston Historical Society, and Pittsburgh Township LACAC. The CIS will be used as a management tool and is a fundamental consideration in the decision-making process(Parks Canada 1996).

CLARENCE STAGE 1 ASSESSMENT

A Stage 1 assessment of the site for the proposed water treatment plant in Clarence Township was conducted in the fall of 1996. Although this area near the Ottawa River has high potential for prehistoric sites, previously conducted archaeological assessments in the vicinity have yielded little. A site visit in October identified several high potential areas, but testing has been put on hold

indefinitely pending the results of municipal amalgamation.

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Parks Canada
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THE MINISTRY OF TRANSPORTATION: THE CHANGING FACE OF ARCHAEOLOGY AT MTO

PAUL A. LENNOX

We all came to expect some changes to the size of the archaeological staff at the Ministry of Transportation, Ontario(MTO) and with the scarcity of new highway problems to address during the 1996 field season, attention was directed toward the completion of outstanding analysis and reporting requirements. Late in 1996 four of the five full time archaeological staff members of the Southwest region were terminated. Central Region experienced similar changes.

The rest of the year saw a quiet rearrangement of "stuff". I, as with the remainder of the staff at MTO, had to figure out what "the new way of doing business" meant - how the accomplishment of something we had become pretty good at could be carried successfully by the private sector. While these efforts continue, I thought it might be appropriate to present here a paper that was delivered to the Association of Transportation Archaeologists in the U.S. during the spring of 1996. The paper was a bold statement of how good we felt about what we were doing, the contributions that we were making as a government agency and the minimal cost at which this was being done. The paper was well received by Transportation Archaeologists in the U.S. many, who command sizeable staffs and administer private sector contracts which will provide good examples for the future of transportation archaeology in Ontario.

At this time I wish to thank the full time and contract staff who have served this office well.

Ministry of Transportation
55 Centre St.,
London, ON N6J 1T4

HIGHWAY ARCHAEOLOGY IN ONTARIO, CANADA

A Paper Presented to the Association of Transportation Archaeologists, Society for American Archaeology Annual Meeting, New Orleans La. April 10, 1996.

The In-house Program

There are five Transportation Regions in the province of Ontario. As is obvious from a brief look at a map there are more highways in the southern part of Ontario, along the north shores of the Lower Great Lakes, where population density is, and has always been, greatest. In the southwest region we have always conducted the legislated archaeological requirements "in house". Temporary staff on contract are hired during peak seasons or for larger projects. Projects come from the highway planners and our office conducts the

required archaeological survey and salvage work, processes samples, does the analyses, and writes the reports.

There is very little administrivia. We do not prepare contracts for tender, we do not evaluate them for award, or deal with external consultants. Our work is reviewed by another government agency for completeness, compliance and clearance. Some reports get published because they are contributions to archaeology.

In my opinion, the "in-house" program is most cost efficient. We generally do more, quicker and at less cost. The staff is well-trained, experienced and well paid.

Our other MTO region, also with a full time staff, is "transitional" between the In-house program and the contracting out of most or their work.

The other three regions have no in-house archaeological expertise. We give them a hand when we can or help them to contract out the limited work they do have. But the absence of a "knowledgeable buyer" status raises some concerns (and costs).

I believe our limited budget gets by well. Administrative costs are cut to the quick and legislative and technical guidelines or requirements, that are not technically appropriate, are questioned, argued and avoided, while we tend to focus on the contributions to archaeology and to heritage conservation, often doing more than what is strictly required by law.

No finds reports (NF Reports)

One area where we have cut costs somewhat is through what has become known as the NF Report or "No Finds Report". Environmental and Heritage Legislation requires an archaeological survey and clearance before construction can proceed. The application of this legislation over the last two decades has broadened from an initial emphasis on major transportation projects - such as new rights-of-way, to smaller and smaller projects - highway widenings, turning and passing lanes, bridge and culvert replacements, and so on. Many of these small jobs don't take long to test and often produce nothing of significance. By agreement between the Ministry of Transportation and the review agency, N.F. Reports, consist of a 1 page description and a map to satisfy the heritage requirements.

Off right-of-way impacts

We have all been around construction projects long after the survey and salvage has been completed and we all know that things go on where they were not anticipated at the time project limits were determined. I'm not talking about the off right-of-way work discussed at length at the SAA's last year - the regional prehistory approach to highway archaeology - or about those long term "secondary" impacts - like gas stations, restaurants and cities. These problems are endless. But, some of the more immediate impacts are directly related to highway construction, they are predictable, and can be controlled - the impacts avoided.

There have been long discussions. Who is responsible? Who pays? When is an appropriate time for these areas to be considered? - Obviously not during the construction phase! The immediate "secondary impacts" like aggregate sources, construction staging areas, and so on were sometimes viewed as the contractors "responsibility" until they were fingered and then the "unforseen" costs, construction delays, and so on, suggested that this may be a "highway" problem.

We have attempted to zero in on some of these concerns. The biggest ones get the most attention. One of the largest "secondary" and somewhat predictable highway impacts

results from aggregate extraction from non commercial "wayside" sources. In the past several years each Highway region, has attempted to address this concern. At first the problem was projected as a large one, one that would require "excessive" costs. Predictive models or potential models have been entertained in some regions.

The attitude in our region - far above my position - was - "Let's conduct archaeological survey(s) and get some idea of the size of the problem- let's meet the requirements as we would on rights-of-way, let's gather some real data." As it turned out the 300 or more anticipated sources per year became only about 30 or so. We started by paying farmers to plough their fields for archaeological survey on potential wayside aggregate sources and later found that the land owners were quite willing to do this on their own since they had much to gain from selling aggregate. Also, the rehabilitation of wayside aggregate sources usually means that the land can be returned to cultivation following the extraction of gravel.

Most archaeological sites identified could be eliminated from aggregate extraction permits thus avoiding impacts. Rarely have we had to excavate a site for the aggregate beneath it. What was originally thought to be an insurmountable problem virtually disappeared within a few years. We all learned more about the resource, who was to gain and who was to lose, and how sites could be preserved without impact while aggregate sources could still be mined.

Costs for aggregate source surveys average about $100 per hectare. This is not much when you consider a 7 to 8 dollar difference per tonnes between wayside and commercial sources and the extraction of several 100,000 tonnes from a source.

In one case, a rare aggregate source with a site right on top of it prompted consideration of an alternative - reconstruction of the Highway by crushing more bedrock from within the right-of way and recycling materials from the previous highway for its reconstruction. Hopefully this plan will result in cost savings, over and above the anticipated salvage excavation costs but, unfortunately, figures are not yet available.

Potential models

I am sure that we have all had experiences with potential models. Somewhere along the road archaeologists have convinced people that those "gut feelings" concerning site locations allow us to predict where they might be, with some accuracy, and archaeologists have been encouraged to develop and, in some cases accept, potential models.

In our region at highways, we have compared our ability to use potential models successfully to the Hans Christian Andersen Fable entitled The Emperor's New Clothes. As the story goes, the Emperor had some beautiful clothing made for him and was told that they could not be seen by those who are stupid or dull witted. Given the high price, no one, including the emperor, would admit to not seeing the beautiful clothing and he thus wandered around naked. Such large amounts of money have been spent on the development of potential models that it is now difficult to admit that they may not be as accurate as we would like them to be. We all know of examples of important sites that are not in predictable locations. Yes, they are a minority but I think this makes those sites all that much more important. Are we prepared to write off a portion of prehistory because we cannot yet predict where it will be?

In our region, we have had aggregate sources rated for their "archaeological potential" before survey, by believers in archaeological potential models. The results were not impressive. Simply stated, we are

about as likely to find sites in areas rated as "low potential" as we are to find them in areas rated as "high potential". Our region may be a bit of an exception since the archaeological record in southwestern Ontario is so rich. In northern Ontario, on the other hand, on the Canadian or Precambrian shield - bedrock, and Black Spruce forests appear to have held low carrying capacities and left low site densities as we move away from current and former shorelines. There, I am told, the large areas being impacted by the timber industry and the limited number of sites inland, makes running around naked OK. For timber management in Northern Ontario, the areas involved are in the 10s of thousands of acres in size and the manageability of these areas makes highway project size appear relatively small.

"Gut feelings" have been used in Ontario to weigh right-of-way alternatives and the potential problems and general costs that may arise if a particular route is selected. But these "gut feelings" are cheap and don't eliminate any portions of our rights-of-way from investigation. To use the models to eliminate field investigations is taking a chance that we would rather not - a chance of missing a site whose location is not predicted. The costs of delays if such sites are located during construction far outweigh any savings promised by the belief in potential models.

NATURAL HERITAGE

Natural Heritage is also protected under Ontario's environmental protection legislation but few have been willing to tackle it. One, on this side of the border, comes from Del Dot's work on "fossil beds" and was presented to this assembly last year by Kevin Cunningham. Fortunately many natural features are very large - mountains, river valleys, and beach ridges, and there is little hope or desire to avoid a particular section of a beach ridge when numerous examples circumscribe the Great Lakes.

We were recently involved with a site of potential Natural Heritage significance. This example included the discovery of several mastodon in a wetland close to our right-of-way 20 years ago. Numerous examples have been recorded in the southern portions of the province but most are remains that have been rediscovered in peoples' barns years after the materials have been removed from their context. The same wetland crossed our right-of-way and, as with archaeological sites, we thought that if such remains were identified during construction we would probably lose another one and potentially hold up construction. We had lots of time - we are typically years ahead of construction - and several of us went to work for a few days with Dick Laub at the Hiscock site in New York State, to gain some idea of the magnitude of the problem should we have one. That was an interesting and foreign exercise for me - the control of water levels in a swamp to excavate mud - but their rewards were "significant" to say the least. They have identified mastodon remains inches from projectile points of the same age suggesting that the first inhabitants of the Great Lakes area hunted these creatures.

We then returned to test our swamp, excavating 1 metre squares and test trenches. While our results were negative, the exercise was very different and interesting for us. If a similar situation arises in the future we have gained an appreciation of the resource and made some valuable contacts who would help us through should the need arise. It is also interesting that no one questioned our concern but stood back and watched as we did what we thought was right - the investigation of a potentially significant natural heritage feature.

"Partnerships" with First Nations, Museums and other Government Agencies

We have watched in fear of the implications of NAGPRA (Native American Graves Protection and Repatriation Act) and, all across Canada, have tried to proceed in a direction of cooperation with First Nations groups. The Canadian Archaeological Association began several years ago with some motherhood statements concerning archaeological resources and native peoples interests. In Ontario some early and unsuccessful attempts were made to formulate contacts at higher levels but it seemed that with land claims and casinos that there was little interest or time to pursue these concerns at that level at this time. So, following the intent of the motherhood statements, we have made a few contacts at the local level - simply communicating to community members that were interested in what we were trying to do. The response has been quite rewarding, though variable. We have heard, on one extreme, that all artifacts are sacred and should be left alone while on the other extreme, we have heard members of the same group - sitting at the same table, suggest - and I quote "these artifacts may be what "**our**" ancestors have left behind to tell "**us**" about "**our**" past".

In another instance traditional elders stated that "we can learn from each other if we can work together". In this example we were excavating a 600 year old semi-subterranean sweat lodge and the elders were delighted to find that this was a part of their past since they were reintroducing the sweat lodge to their community. It is early yet but I feel that Native people will be one of our strongest allies in preserving their past.

On another front, as the government has recently announced downsizing, privatization and cutbacks, we have had a timely interest in "partnerships" stated by a local Museum as well as another government agency. There are areas we could always have considered but never have pursued, areas where our programs deviate or converge and a co-operative relationship would be mutually beneficial. Artifact curation is one area where our facilities are deficient. The collections deserve better and through the Museum partnership we can provide it to them. Also, the dissemination of our results has been, in the past, catch as catch can. Publication is not a requirement and while some of the more monumental results have been published, there is a lot of useful information that has not been widely disseminated. To the delight of the Museum, our professional colleagues and the government we have provided two manuscripts since December to the Museum for inclusion in their research series and have requests for more.

We are also exploring a cooperative effort with another government agency. We have an archaeological staff while the Ministry of Natural Resources have none. At this time of restraint and downsizing (we foresee losing workload and staff) and we are proposing that our Archaeologists do work for other government agencies. We anticipate, in return, the Ministry of Transportation will benefit from use of their staff and expertise. It is early yet, but I hope to see you all next year and for years to come.

Conclusions

In conclusion, I think that the "In house" program has been very successful. I hate to see heritage dollars go to administrivia. I think that our NF Reports are a step in the right direction but we have to look for other opportunities to eliminate unnecessary "procedural standards" that are not appropriate and cost big bucks.

I think that our annual expenditure for heritage protection is small. I have heard

some people compare our annual budget to the amount of gravel lost from the back of trucks on their way to a job. I have also heard revisions to individual property evaluations that are of a comparable size. And, I don't think from this that we are doing a "bad" job, I know that our work is highly respected.

I think that archaeology has become administratively burdened by the interpretation of legislation and the process that has developed to ensure site protection and compliance.

As an example, I recently heard a consultant state that contract administration amounted to more than half of the project budget.

I think that the recent decline in the number of new projects will give us a chance to catch up on a bit of a backlog, and that the "economic squeeze" will force "partnerships"- real opportunities that should have been incorporated more fully but were not. As these areas are pursued and developed, I think that we have to keep in mind why we are here, the risks that come with both natural and cultural heritage resources on and off of, highway rights-of-way , and the risks that solutions offer alongside of the benefits.

Lastly, while we are scientists, somewhat removed from, but at the same time and in a different way, very close to what we study, we must "have due regard for" the people, places and things we are trying to understand. Otherwise, as government employees - public servants, what it is that we are trying to save and who for, is without meaning.

CONSULTING PROJECTS CONDUCTED IN 1996 BY MAYER HERITAGE CONSULTANTS INC.

ROBERT G. MAYER AND J. TREVOR HAWKINS

Mayer Heritage Consultants Inc. (MHCI) is a 100% Canadian company based in London, Ontario. The corporation maintains its head office in Byron Heritage House in the Byron community in the west end of London. MHCI also has regional representatives in Toronto, Guelph, Hamilton, Sudbury, Tobermory and Montreal. For some of the larger projects such as those concerned with the construction of the Electronic Toll Highway 407 in the Greater Toronto Area and the construction of the second span of the Blue Water Bridge and its allied facilities, temporary field offices incorporating electronic communication facilities and vehicle shuttle services were established.

Services are offered in a number of broadly defined areas: 1) Cemetery Development (industrial and residential) including special uses such as power co-generation; 3) Transportation and Infrastructure; 4) Conservation; 5) Aboriginal First Nation Project Consulting; 6) Archaeological Master Plan Development; 7) Built Heritage Evaluation; and 8) Peer Review. Final reports for the projects have been filed, as applicable, with the Ontario Ministry of Citizenship, Culture and Recreation (OMCzCR), and with other regulatory or concerned agencies.

In recent years, with a large number of significant infrastructure/development/heritage evaluation projects underway, it has been possible to introduce a new element into many of these studies. While the accepted approach has always been to relate the findings of a particular study to those from nearby sites, some of the study sites reported here are more nearly contiguous and extend for a greater continuous distance, thus permitting them to be examined in a wider community context. The projects described in this review may all be considered, not only as discrete studies in themselves, but also as part of the broader economic and social context of their respective communities.

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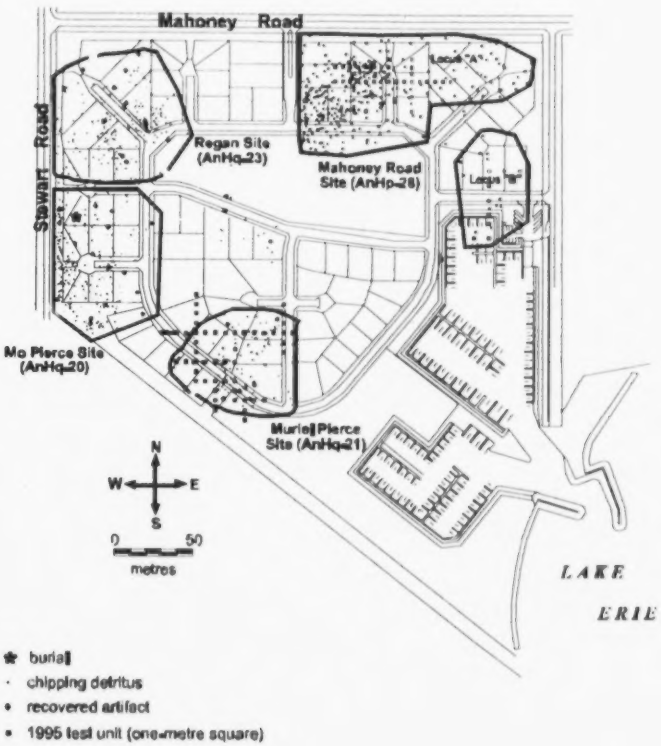
ARCHAEOLOGICAL ASSESSMENT (STAGES 3 AND 4), SOUTH BAY MARINA COMPLEX, PELEE ISLAND

Pelee Island, which lies offshore in Lake Erie approximately 25 kilometres south of Leamington, Ontario, was originally a formation of several smaller islands separated by extensive marshy areas. These marshes were drained in the 1880s to gain thousands of additional acres of arable land for the production of fruits, wine grapes, tobacco and cotton. A secondary result derived from the drainage of the marshes was that the four separate communities of the main islands became part of a single larger island community.

MHCI started an archaeological assessment of the proposed South Bay Marina Complex in 1995 (Mayer and Hawkins 1996). The Stage 1 and 2 fieldwork continued into December but, as the year drew to a close, the weather truly worsened. The MHCI crew waited somewhat impatiently for the foul weather to moderate, however, the icy gale force winds continued to lash across Pelee Island, and further work was postponed until the arrival of spring's more favourable weather. A report (MHCI

Figure 1. Archaeological Sites on the South Bay Marina Property



1995) detailed the methods and results of the assessment (Stages 1 to 3) completed up to that time. In consultation with the OMCzCR, recommendations were made that additional fieldwork be conducted in order to obtain sufficient information to determine the area limits of the Mo Pierce site (AnHq-20) and the Muriel Pierce site (AnHq-21), as well as to evaluate the significance and information potential of the cultural materials present.

In April of 1996, the recommended fieldwork was completed under the direction of Jim Wilson, and an addendum report submitted (MHCI 1996a). Based upon the results obtained, a recommendation was made for Stage 3 test excavations at both Locus "C" and Locus "D" of the Mo Pierce site, as well as a recommendation for clearance of any continuing concerns for the Muriel Pierce site. A subsequent meeting with the OMCzCR, the proponent and MHCI formulated strategy for additional Stage 3 investigations and a Stage 4 mitigative excavation. A decision was reached to limit Stage 3 test excavation to Locus "C" of the Mo Pierce site. It was also decided that Locus "C" be registered as a separate site, and it was subsequently registered in the national and provincial sites inventory as the Regan site (AnHq-23). The decision was also reached that assessment of Locus "D" of the Mo Pierce site (now referred to simply as the Mo Pierce site - AnHq-20) could proceed immediately to the Stage 4 monitoring of topsoil removal. Similarly, the decision was reached that the area of densest surface artifact concentration on the southern half of the Muriel Pierce site should also be subject to Stage 4 monitoring of topsoil removal.

Because so few Early woodland sites have been excavated in southwestern Ontario, any conclusions concerning settlement and subsistence patterns are necessarily speculative. While only a small portion of the Regan site has been excavated, it has the potential to contribute significantly to our understanding of Early Woodland settlement and subsistence patterns. Of the interesting and useful observations which can be made based on the preliminary investigations, perhaps the most important relates to patterns of lithic raw material and utilization. The fact that virtually all of the Onondaga chert in the Regan site assemblage comes from secondary sources, deposits of small beach cobbles is surprising and important. Previously, it had not been clear to what extent groups on the periphery of the Meadowood exchange network relied on local chert sources. It is also interesting that given the relative proximity of high quality Ohio chert sources, such as Pipe Creek and the Mercer deposits, there is very little of this material in the collection. Based on the Regan site assemblage, it appears that the group or groups utilizing this location were not transporting large quantities of chert to the island. Rather, it seems that they relied on local deposits of Onondaga and Selkirk chert with most of the exotic detritus resulting from the resharpening or recycling of bifaces which had been manufactured at other locations.

The lack of subsurface cultural features in any of the test units is also informative. The presence of pit features is often, but not exclusively, associated with more lengthy stays at a location. Their absence, combined with the narrow range of artifacts collected from the site, suggests that visits to the site were probably quite brief, and oriented to the exploitation of a few specific resources. It is particularly interesting to note the absence of recycled tool forms such as hafted scrapers and drills. Virtually all Meadowood sites thus far investigated in southwestern Ontario have some evidence of the recycling of broken cache blades and/or points into other classes of artifacts. This appears not to have been the case at the Regan site, which once again supports the hypothesis that the site was subject to very brief periods of repeated utilization for a very specific purpose, rather than

subject to lengthier periods of generalized utilization.

Given the location of the site on Pelee island, it is unlikely it was occupied during the winter season although no evidence has been found to date that would pinpoint what period(s) during the spring or fall when it would have been occupied.

OSTEOLOGICAL ANALYSIS OF THE EARLY WOODLAND BURIAL ON THE MO PIERCE SITE (ANHQ-20)

During the 1996 monitoring of the mechanical removal of topsoil from the Mo Pierce site (AnHq-20) on Pelee Island, human skeletal remains from a single individual were found. Because these remains indicated the presence of a burial in an unapproved aboriginal peoples' cemetery, excavation of the feature was halted immediately. Pursuant to Section 14 of Regulation 133/92 of the Cemeteries Act, a site disposition agreement was approved between the Walpole Island First Nation and the registered owners of the property. This agreement permitted the disinterment and reinterment of the burial. The disinterment employed standard hand-excavation methods. The skeletal remains were analyzed by Megan Cook (1997) using non-destructive observation and *in situ* measurements in order to obtain as much information as possible about the cultural affiliation, age sex, and pathologies of the individual. The remains are to be re-interred on Pelee Island a short distance from where they were found.

The burial feature, as exposed in the undisturbed subsoil, was 196 centimeters long, 45 centimeters wide and 11 centimeters deep. It would have been originally covered by at least 30 centimeters of ploughzone topsoil. A single primary extended supine burial with a south (head) to north (feet) orientation was found in the feature. With the exception of the cranium and feet areas, two to three layers of limestone rock slabs were laid on top of the feature. The largest slab was 18 centimeters long. The head and feet were slightly elevated compared to the rest of the burial, and sustained considerable damage from ploughing. Most of the bones from the cranium and feet were missing. The remaining bones were fragmented and broken.

The very gracile mastoid process of the temporal bone and the wide sciatic notch are indicative of a female. Using the formula for long bones developed by Trotter and Gleser (1958), the stature of this individual was calculated to be 140 centimeters (i.e., approximately 4 feet and 11 inches). Because all the bones were fused and there was no evidence of any remaining epiphyseal scarring, the individual is thought to be an adult over 25 years of age. Age-related osteoarthritis was not found in any of the bones and no dental attrition or caries were present in the teeth. The 3rd molars are fully erupted and little wear is present on the occlusal surfaces. Comparing these conditions with the dental wear patterns described by Bothwell (1965) and Lovejoy (1985), the estimated age-at-death of the individual is between 25 and 30 years old. No gross pathologies were observed in any of the bones. There was no age related osteoarthritic changes, any evidence of trauma, any epiphyseal scars or unfused bone.

Because teeth are durable, they are consequently very valuable for determining age-at-death and health status. They are also helpful in assessing cultural affinities. All the teeth with the exception of a 3rd molar were found. Most were in their respective sockets in the mandible and maxilla. The upper incisors are shovel-shaped, indicative of North American aboriginal ancestry. It has been found that a high percentage of Native Americans possess this trait and this has been used as a marker for identifying Native burials (Bass 1984). All the teeth are worn down with fairly extensive wear

on the 1st molars and little wear on the 3rd molars. The alveolar bone is healthy, and dental caries, hypoplasia or periondontal disease processes are not present. The dentition also indicates that the diet of this individual was low in carbohydrates. Bothwell and Lovejoy's age classifications of wear were used to estimate the age-at-death of the individual.

Subsequent interpretation by Jim Wilson concluded that this isolated interment provides an interesting and useful addition to our understanding of Early Woodland mortuary patterns in southwestern Ontario. The single broken Meadowood projectile point found to the right of the cranium, was the only mortuary offering found in association with the pit feature. The limestone slabs had been removed by ploughing in this area, making it difficult to determine if the projectile had been originally above or below the limestone. While there are no other reported instances of Early Woodland rock-covered burials features in Ontario, five such features are reported from the Early Woodland Pointe-du-Buisson 5 site just south of Montreal, (Clermont and Chapdelaine 1982:153). Unlike the Pelee island burial, the Pointe-du-Buisson burial pits contained multiple cremated interments. A quick survey of the southern part of Pelee Island indicates that limestone slabs were probably obtained from the lakeshore approximately one kilometre to the southeast of the burial feature.

Spence (1986) has suggested that emergence of true cemeteries during the Terminal Archaic and Early Woodland periods (1100 to 450 B.C.) can be related to an attempt on the part of bands to make a symbolic claim to a specific territory and the resources within it. Spence also suggested that individuals who died at an inconvenient or impractical distance from the band cemetery would receive primary burial at the location of their death. At a later date, these individuals would have been re-interred at the band cemetery when the groups' seasonal round brought them back to that part of their territory. If this is the case, then the burial at the Mo Pierce site may be an example of an individual who died well away from the band's cemetery, and for unknown reasons was not exhumed for later reburial at the band's cemetery. It is possible that the precise location of her interment was forgotten, or that it simply proved impractical to return to collect her remains for inclusion in the group cemetery. Given the location of her burial on Pelee Island, this is a likely scenario.

Alternatively it could be argued that her placement under a layer of limestone slabs suggests a certain amount of permanence, and that there was no intention that she be re-interred at a later date in a larger group cemetery. Isolated burials dating to the Terminal Archaic period have been reported in southwestern Ontario and adjacent regions (Spence et al 1990). Stothers and Abel (1993:79) suggest that they "may represent individuals whose remains were not returned to larger social centres for interment in local or regional cemeteries for various reasons, possibly relating to feasibility. Likewise, these individuals may have been denied access to these larger centres of integration on the basis of social status".

HIGHWAY 407 ELECTRONIC TOLL ROAD GREATER TORONTO AREA

As reported in the AARO for 1995, MHCI, along with M.M. Dillon Limited, served as an archaeological subconsultant on the Highway 407 project conducting assessments for the environmental studies being co-ordinated by AGRA Earth and Environmental Limited on

Figure 2. **Highway 407 on Walker & Mile Co.'s 1877 Map of Trafalgar Township.**

behalf of Canadian Highways International Constructors and the Ontario Transport Capital Commission. This Electronic Toll Road is a billion dollar project providing for travel around the western and northern ends of the Greater Toronto Area, from Highway 403 in the west to Highway 48 in the east.

In 1996, MHCI conducted a Stage 2 general survey of the north-south portion of Highway 407 between Highway 401 and Highway 403. Because this portion of the highway parallels an existing rural road, the Ninth Line in the Regional Municipality of Halton, it provided a rare opportunity to

examine the affected properties in terms of their community roles. In rural areas, there are what might be termed linear communities. That is, the residents whose properties front on a concession or line road tend to regard themselves as members of a community which stretches for a variable distance along their road. Within this linear community, there can be smaller sub-units predicated upon church membership, school sections, or other organizations. In fact, in earlier days before the automobile provided for easy transportation over longer distances, the community's business and social life centred around the post office, the general store, and other mercantile or service establishments such as the blacksmith shop. The local churches and schools provided venues for social activities and meetings in addition to their primary religious or academic uses.

Within these communities there were landowners and business people who played a prominent role in the development of their communities. In his book, Noel (1990) explains the role these prominent landowners and financiers played in moulding life in Upper Canada and Canada West. To Noel, the political, social, and economic make-up of Ontario was based overwhelmingly on land. The owner, or patron, incrementally acquired large tracts of property, that were subsequently leased or sold to new migrants to the community. This process created a two tier social system: the patron who had money, credit, and access to resources; and the client who had his (very rarely her) labour and loyalty to offer. They both sought political, economic, and social advantages in each other.

Along with the archaeological findings, these social/economic relationships were explored and documented in four volumes (MHCI 1996b, c, d, e) for nine Euro-Canadian homesteads. These volumes are on file with the OMCzCR. Access to these volumes may be requested from the OMCzCR, but approval may be required from the various agencies involved plus be subject to confidentiality and date-of-release restrictions.

INDIVIDUAL BUILDINGS AS PART OF THE COMMUNITY

The heritage property and three buildings described below differ both in form and function. They include urban and rural properties, residential and commercial properties and those that have made the transition from one classification to another.

Although each was studied as an independent entity, it became apparent that it was impossible to conduct these studies without considering their changing roles in their larger communities. Accordingly, each of these studies reports on the community roles played by each of the buildings and its occupants.

THE DE LATT PROPERTY, NIAGARA-ON-THE-LAKE, ONTARIO

The de Latt property in Niagara-on-the-Lake consists of 11.9 acres to be developed as the St. Andrews Glen residential subdivision. At the time of the study, the property was operated as a horse farm and riding academy.

The grounds included paddock and pasture areas which could not be ploughed. Background research identified four registered sites within two kilometres of the study area in addition to the historically significant Butler's Burial Monument situated north of the property on the opposite of the adjoining Two Mile Creek.

One small dirt paddock was pedestrian surveyed at a two-metre interval. The remainder of the property, excluding the chronically wet flood plain, was surveyed using the standard test pit method. Approximately 1.5 acres in the vicinity of the existing house and barn structure had been previously impacted by landscape modifications and were therefore surveyed at a

ten-metre interval. The balance was surveyed at a five-metre interval.

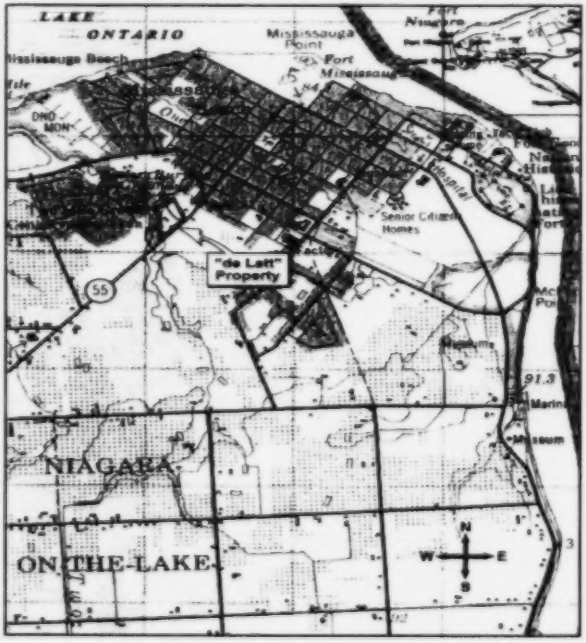
The general Stage 2 survey found two locations with archaeological materials. Location 1 (AhGs-18) is primarily a 19th century Euro-Canadian site with a modest prehistoric Aboriginal component. Location 2 is a prehistoric Aboriginal findspot which yielded a single piece of Onondaga chert chipping detritus. Additional test pits were excavated at a two-metre interval around this find, but no additional cultural material was found.

Location 1 was subjected to Stage 3 investigation consisting of the hand excavation of twelve test units, each one-metre square. This Stage 3 investigation recovered 1,953 artifacts including 1,039 ceramic sherds, 326 brick fragments, 227 pieces of glass, 175 pieces of mortar or plaster, 98 animal bones, 47 nails, 30 white ball clay pipe fragments, six miscellaneous metal artifacts and five buttons. Two subsurface cultural features, a pit feature and a portion of a dry laid floor or foundation were documented but not excavated.

Given that Euro-Canadian settlement activities at the mouth of the Niagara River began as early as the second half of the 18th century, most properties in the immediate vicinity of Niagara-on-the-Lake have a high potential for historic archaeological resources. However, the complexities of understanding settlement in this area of the township are numerous. Unlike most townships that organized land surveys by lot and concession, the surveyors for Niagara Township assigned individual numbers to the lots.

Lots near Lake Ontario, usually in the broken front concession, also possessed

Figure 3. Location of the de Latt Property.



individual lot numbers, with the exception of a large number of odd-shaped lots located near Niagara-on-the-Lake. Township planners organized these properties into a group called "Miscellaneous". The de Latt property is located within this area. Miscellaneous areas appear in the abstract index to land registry records by chronological order of transaction, rather than by location. Tracing land-ownership back to the original crown grant is complicated, especially considering the difficulty of accurately situating the subject property on old maps and surveys.

Land Registry records indicate that a Hamilton H. Killaly is listed as owner of a property within the "Miscellaneous" block in 1857. From this record it was possible to trace ownership back to the original crown grant to Col. Thomas Butler, son of Lt.-Col. John Butler of "Butler's Rangers" fame. The Butler family, which owned the property for the entire first half of the nineteenth century, played a prominent role in the development of the township, economically, socially, and politically. The family's significant military service suggests an important social contribution to the community, and it is quite possible that the family played the role of patron to other settlers. The value of these economic, political, and social relationships to the community and its history might be further explored during a Stage 4 study.

The Dennison Residence, Thamesford, Ontario

Mayer Heritage Consultants Inc. was contacted to conduct a very different style of study of this private residence located in Thamesford, a small community of 2,000 residents, a few kilometres east of London. The object of this study was to prepare an illustrated document to assist real estate brokers in presenting this residential property for sale.

The original farm property had been in the Dennison family for many decades, but, over the years, portions had been sold. The remaining land surrounding the Dennison residence was recently subdivided and new, modern residences were being built, with one of these new homes to be occupied by Mrs. Dennison. The original farmhouse with its sizeable front and rearyards was to be sold. But it was the wish of Mrs. Dennison that the property be sold to a family who would have a respect for the property such that the dwelling and its grounds might retain its early charm and integrity.

The house was viewed and photographed along with the property and the developing neighbourhood with a view to preparing an opinion concerning the continuing viability of the house as a private residence in the newly emerging neighbourhood. Mrs. Dennison, who had occupied it for the past fifty years, was interviewed in order to document the earlier use of the property. This survey was not intended to be either a real estate appraisal to establish the monetary value of the property, or a pre-purchase inspection of the physical condition of the property, as these responsibilities remain with the owner and the prospective purchasers.

The Dennison residence at 110 Sullivan Street in Thamesford is located near the top of the gently sloping hill which forms the east bank of the Thames River, and overlooks the park and the mill-pond to the west. The construction of DeLatre Street - East of the River and Sullivan Street resulted in the this residence being located at the corner of these two streets such that the front and side yards are of a size and scale associated with urban homes. The house is of two-story construction of white/yellow brick. This brick, known architecturally as white brick, is made from clay found locally along the Thames River in the London area.

The house was originally constructed circa 1850 as a single-story cottage. In 1876, according to the date appearing over the front entrance, the house was enlarged through the

addition of a second storey. At this time, two one-storey bay windows were added to the front of the house. The house thus gained an architecturally pleasing symmetrical appearance. The report documents the various attributes of the house exterior, the interior and the grounds. The considered opinion, supported by photographs, was offered that the building retains its early charm, and wears its maturity well. It has successfully changed from being an isolated farm residence in the Thamesford rural community, and clearly shows its status as the senior house of the new urban community. It does not in any way suffer architecturally when compared with its new neighbours.

GREGSTEN COTTAGE, LONDON, ONTARIO

This building has served for the past seven years as the head office of Mayer Heritage Consultants Inc. The property on which the building stands was, when it was registered to Dudley Merrills in 1844, farm land covered with trees, streams and the remnants of an ice-age bog. It was located one city block east of London, but Merrill expected London to expand and to incorporate his land within the municipal limits. London did indeed expand, and the property now is at the eastern edge of London's downtown area, many kilometres west of London's eastern boundary.

The land was described by different evaluators as being "fertile" or of "poor quality". Nevertheless, the property was owned as an investment at various times by significant London residents including Josiah Blackburn, proprietor of The London Free Press and, after the house was built, by Oliver McClary, one of the McClary brothers who operated the McClary Stove Company, London's largest employer.

The house was one of two built on the property. The first, now a chiropractic clinic, was a large residence to be occupied by the owner. The second, immediately adjacent at 429 Colborne Street was built as a rental property. The building is a one-and-a-half storey cottage which follows the Gothic pattern used in the Revival period. Structural elements used for decorative purposes include the elaborate bargeboards and finials, the cathedral style windows and the stained glass inserts so widely seen in London.

The Great Western Railway constructed its station just two blocks away, making the house ideally placed both to downtown, and via the railway, to places farther away. The house had many tenants over the years, but the one who inhabited the house the longest was Mrs. Ellen Gregsten. The widow of a prominent London wholesale dry goods merchant, Mrs. Gregsten lived in this house from 1870 until her death in 1924. Mrs. Gregsten was a Wesleyan Methodist and was quite a prominent person in her church work.

In late 1957, the building and property were sold to the Board of Trustees of the Roman Catholic School Board. Until 1964, the building remained a residence. In 1965, the Sisters of St. Joseph operated a music school, providing piano lessons for students from Catholic Central High School located directly across the street. The music school moved in 1973, and since that time the building has served as commercial offices for such businesses as a travel agency, a real estate office, and until early 1998, as Head Office of Mayer Heritage Consultants Inc.

Once located outside London, Gregsten Cottage is now part of London's downtown core. Gregsten Cottage has changed from being a part of a rural community to being a part of the urban community. And it has changed from being a residential property to being an academic facility and ultimately to being a commercial office property. Although now fitted with modern amenities, the design remains unchanged and the cottage retains its original architectural charm.

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1996 CONSULTING WORK IN ONTARIO

L.R. BUD PARKER

In 1996 the writer conducted one pre-development archaeological assessment. Exploratory investigations or salvage excavations were conducted at one additional site in partnership with Amick Consultants. This field work and research resulted in the registration of one new archaeological site.

ASSESSMENT OF PROPOSED SUBDIVISION 30T-92004, AYR

The proposed subdivision 30T-92004 in the Village of Ayr, Regional Municipality of Waterloo was conducted in the late fall of 1996. The study of 7.4 hectare property resulted in the recovery of six widely scattered lithic artifacts (Onondaga chert), including a portion of a Late Archaic "Genesee" point type. This last findspot was designated the Edgar site (AhHn-126), and like the other finds it was not unexpected in these lands adjacent to the Nith River

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CONSULTING ACTIVITIES UNDERTAKEN IN 1996 BY THE LONDON MUSEUM OF ARCHAEOLOGY

ROBERT J. PEARCE

During 1996, the London Museum of Archaeology undertook 26 separate consulting projects which involved archaeological fieldwork to survey 678 hectares (1,675 acres) of land. Nine of these projects included Stage 3 investigations to determine the nature and significance of sites, and/or Stage 4 mitigative excavations.

The 1996 fieldwork took place in 11 different locations throughout southern Ontario, as follows:

Municipality	Town/Township/City	Number of Projects
Elgin County	Southwold Twp.	1
RM Haldimand-Norfolk	Norfolk Twp.	1
Kent County	Chatham	1
Middlesex County	Lobo Twp.	1
	London Twp.	2
	Westminster Twp.	2
RM Peel	Mississauga	3
	Meadowvale	3
RM York	Markham	1
	Richmond Hill	10
	Woodbridge	1

A total of 47 different sites were discovered or investigated as part of this fieldwork.

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COMMUNITY PLANS/ NEIGHBOURHOOD STUDIES

The Museum continued to provide archaeological consulting services for various landowner groups on a number of community plans or neighbourhood studies, as previously outlined in the Museum's submission for the Seventh AARO (Pearce 1997). This included

Stage 2 assessments/surveys of previously unsurveyed lands, Stage 3 investigations and Stage 4 mitigation, in the City of London (former Townships of London and Westminster, Middlesex County, two projects) and the Regional Municipality of York (Markham, Richmond Hill and Woodbridge, 11 projects).

MACARTNEY SITE

The Museum's on-going work within the Bayview-Northwest Secondary Plan Area in Richmond Hill involved further Stage 2 survey in the block of land bordered by Major Mackenzie Drive, Leslie Street, Elgin Mills Road and Bayview Avenue. Stage 2 archaeological survey of ploughed and cultivated fields within the 37.5 hectare parcel to be developed as Draft Plan of Subdivision 19T-94041 led to the discovery of five insignificant, isolated findspots (AlGu-154 to 158) and one potentially significant site (AlGu-159); the latter was named the Macartney site, after the landowner.

The Macartney site was initially discovered on June 5. While surveying a field in systematic transects spaced at 5 metre intervals, crew members Robert J. Pearce and Jim Esler simultaneously discovered two artifacts: a ceramic body sherd and a ground stone celt fragment. After we had marked the locations of these two artifacts we began on intensive search of the area and discovered several other artifacts, the locations of which we also marked. We then immediately decided to conduct a controlled surface collection by walking over the field in a north to south direction in systematic transects spaced at one metre intervals, marking the precise location of each artifact observed on the surface. The end of the day saw the crest of the knoll where the site was located dotted with bright orange surveyor's flags that we had used to mark the artifact locations. We returned to the site the following morning and continued the controlled surface collection, this time crossing the knoll in an east to west direction in systematic transects spaced at one metre intervals. We established a datum in the approximate centre of the site and used a transit and stadia rod to record the locations of all 111 artifacts we had discovered; these were distributed in a circular area 75 metres in diameter.

The 111 artifacts recovered from the site included four ceramic rim sherds, 78 other ceramic sherds, three ceramic pipe fragments, one projectile point fragment, 10 other lithic tools (drill, scrapers, wedge, utilized chert flake), 10 pieces of chipping detritus, one hammerstone, one ground stone fragment, two fire-cracked rocks and one animal bone fragment. There were two distinct concentrations of artifacts on the surface, coinciding with two small patches of darker soil discolouration, inferred to be plough-disturbed midden deposits.

At the time the site was discovered, the field had been ploughed, disced and seeded in a crop of mixed grain (spring wheat and oats), but the new crop had not yet sprouted. After a heavy rainfall Museum personnel returned to the site again on June 13 and 14 to conduct another controlled surface collection; at that time the grain crop was just beginning to sprout through the surface. We discovered a further 83 artifacts, recorded from the same datum. Most of those artifacts were discovered within the two small areas of soil discolouration that we had inferred were middens. However, a few artifacts were discovered beyond the initial site area, extending the site size to an ovate distribution 120 metres northwest to southeast by 80 metres northeast to southwest.

By this time we had concluded this site was a potentially significant Iroquoian component that would require further

investigation. The results were discussed with the client and the Ministry of Citizenship, Culture and Recreation, and we initiated a Stage 3 investigation on July 8. This first involved the manual excavation of nine test units (each one metre square). Four squares were excavated in the northern midden and five in the southern midden. Excavation of the nine squares resulted in the recovery of more than 200 additional artifacts, predominantly fragmentary ceramic sherds. Later, we employed a Gradall-type backhoe to strip the topsoil from a 10 metre wide trench, extending across the entire site area in a west to east direction midway between the two middens. The two side walls of a longhouse were exposed and clearly visible on the surface of the subsoil in this trench, even before we shovel-shined the subsoil. We installed a grid of wooden stakes at 5 metre intervals to record the post moulds.

Further discussions with the client led to the determination that it would not be possible to modify the plan of subdivision to preserve this significant site, and the client authorized the Museum to proceed immediately with a Stage 4 mitigation.

The Stage 4 mitigation, completed throughout the month of July, involved further manual excavation of one metre squares to completely delineate and salvage the two midden deposits, and use of a Gradall to strip the topsoil from the entire site area as known from the surface collections.

The Macartney site consisted of a single longhouse with two middens, one outside either end of the house.

The house was oriented in a northwest to southeast direction, with the longitudinal axis being rotated 45 degrees west of magnetic north. The house was 36.5 metres long and 7.2 metres wide. There were two distinct circular clusters of numerous very small post moulds surrounding two centrally located hearths; such features have traditionally been interpreted as "sweat baths" (i.e. Finlayson 1985:409-410). There were interior support post moulds and interior isolated post moulds. There were no interior house storage pits, but there were six small features inside the house and two additional small features just outside of the eastern wall of the house, which in total yielded only 52 artifacts plus 231 pieces of charcoal.

There were several other stains in the subsoil which we recorded as "features", both inside and outside of the longhouse. However upon excavation all were determined to be rodent burrows consisting of amorphous blobs of disturbed soils extending less than 30 centimetres into the subsoil, with an artifact assemblage consisting of only eight ceramic sherds, one ceramic pipe fragment, one animal bone fragment and a fragment of a ground stone metate.

Total excavation of the site resulted in the recovery of 2617 artifacts. A majority of these (1861 artifacts or 71.1% of the total site assemblage) were found in support post moulds inside the longhouse. This figure is skewed by the presence of 1346 pieces of charcoal recovered primarily from flotation samples taken from the support post moulds, and six bags of flotation fraction residue. If the charcoal and flotation residue are omitted, the total site assemblage consisted of 1033 artifacts, of which 509 (49.3%) were recovered from support post moulds.

Each midden had been entirely impacted by years of ploughing; there were no intact basal deposits extending below the plough zone into subsoil.

The artifact assemblage had 17 analyzable ceramic rim sherds. These can be assigned to established types as follows: There were 764 other ceramic sherds, predominantly small, fragmentary sherds less than 2 centimetres in maximum dimension. Seven

items were classified as sherds from juvenile vessels. Remarkably, there were roughly the same number of ceramic pipe fragments (18) as there were rim sherds: eight bowl fragments, eight stem fragments and two fragments classified as juvenile pipes. The eight bowl fragments were from well-known types: Plain Trumpet, Plain Conical, and Ring. One Ring fragment was from an enormous bowl which would have had an exterior diameter at the lip of over 50 millimetres; the lip was precisely 20.0 millimetres thick, and the bowl was decorated with four incised horizontal rings.

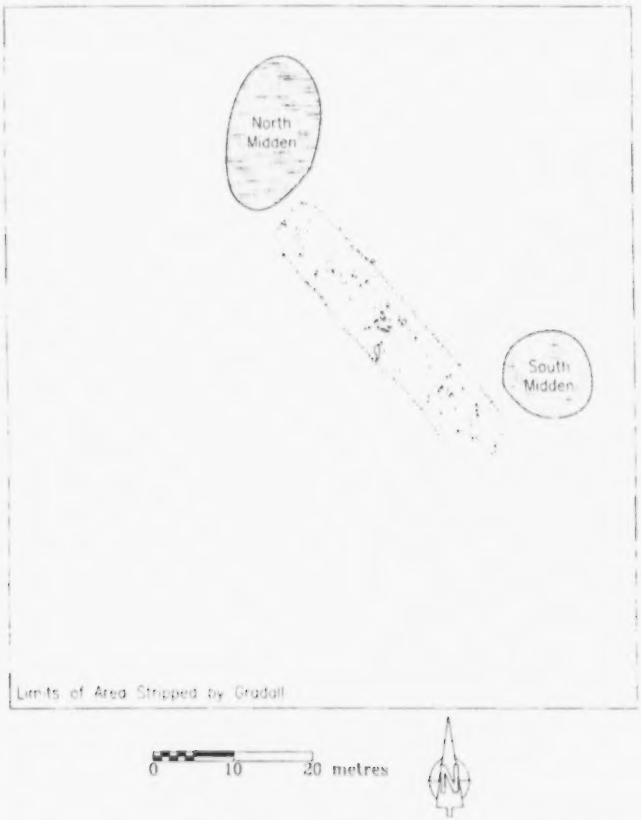

Figure 1: Macartney Site AlGu-159

TYPE	NUMBER	PER CENT
Huron Incised	4	23.6
Black Necked	3	17.6
Sidey Notched	3	17.6
Niagara Collared	3	17.6
Warminster Crossed	1	5.9
Sidey Crossed	1	5.9
Lalonde High Collar	1	5.9
Pound Necked	1	5.9
TOTAL:	17	100.0

The lithic component of the artifact assemblage can best be described as equally sparse and poor: one projectile point fragment, one drill, eight scrapers, two wedges, four utilized chert flakes and just 45 pieces of chipping detritus.

There were only a few ground and rough stone artifacts: four hammerstones, one metate fragment, one abrader, one tubular stone bead and four miscellaneous ground stone fragments of unknown function.

Since we recovered only 137 animal bone fragments (118 of which were picked from processed flotation samples from interior house support post moulds), it is not surprising that there were no bone artifacts.

Evidence for the use of cultigens was limited to 12 carbonized corn kernels.

Excavation of the Macartney site contributed substantially to our growing knowledge of the Iroquoian (prehistoric Huron) occupation of the Rouge River drainage basin. The site was located a mere 800 metres north-northwest of the 0.8 hectare Watford (AlGu-5) village, and less than 500 metres east-northeast of another special-purpose cabin site, Toad-in-the-Hole (AlGu-128; see Pearce 1995:86-88).

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SUMMARY OF 1996 RESEARCH BY ARCHAEOLOGICAL SERVICES INC.

ROBERT H. PIHL, DAVID A. ROBERTSON AND RONALD F. WILLIAMSON

Cultural resource management activities, carried out within the context of land development, play a significant role in preserving and documenting the fragile archaeological record of Ontario. In addition to numerous heritage planning studies, the consulting firm of *Archaeological Services Inc.* (*ASI*), operated under the direction of Ron Williamson, conducted approximately 80 archaeological assessments throughout Ontario during 1996, resulting in the registration or re-examination of 145 archaeological sites. Further investigations were conducted on several of these, as well as on sites discovered in previous field seasons. Four of the projects undertaken by the firm are discussed in further detail below.

THE HOLMEDALE SITE

Under the project direction of Ron Williamson and the field direction of Robert Pihl, comprehensive salvage excavations were completed at the Holmedale site (AgHb-191), a Transitional Woodland period settlement measuring one-half hectare in area and located on a low terrace of an oxbow of the Grand River.

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The combination of hand excavation and mechanical removal of plough-disturbed soil resulted in the identification of approximately 80 pit features, including hearths, small shallow pits, and a number of large deep storage/refuse pits from which most of the artifact assemblage was recovered. Within the central portion of the site, it is possible to identify a number of house structures within a one-row palisade (Figure 1). Several fencelines are also evident. Although not as well defined, most of the Holmedale houses would appear to be consistent in size and form with those uncovered at the nearby Porteous site (Noble and Kenyon 1972). One structure in the northwest corner of the site appears to be bisected by the palisade, suggesting more than one episode of occupation.

At present, two radiocarbon dates have been obtained for the site. Charred corn from Feature 1 yielded a calibrated AMS date of A.D. 1020, and a combined sample of charred walnut shell from Features 1 and 7 produced a calibrated conventional date of A.D. 984. As the samples were recovered from undisturbed contexts both dates are considered to be reliable.

An extensive ceramic assemblage was recovered from the site. Although the formal analysis has yet to be completed, the overall absence of coil breaks and the large number of

exfoliated sherds suggests that the vessels were manufactured by modelling or accretion rather than by coiling. The vessels are conoidal or rounded in shape with both conical and rounded bases. They are generally well made and feature relatively thin walled construction. Upper rims are uncollared but frequently thickened, short to medium in height, vertical to slightly outflaring, and mostly flat-lipped. There is substantial variation within the decorative motifs which form two or three decorative bands on the vessel exteriors. Punctation, cord-wrapped stick or cord stamping constituted the principal decorative techniques, although linear punctation or drag stamping, cord impression or, more frequently, fabric impression was sometimes incorporated into the exterior, interior or lip motifs.

A small sample of pipe fragments, including plain bowls and several faceted stems, were recovered from the site, as well as an almost complete undecorated vasiform pipe found in one of the large storage pits.

The lithic sample includes an extensive chipped lithic and modest ground stone industry, neither of which has yet been analyzed in detail. The chipped stone assemblage includes numerous triangular projectile points, some of which appear to be of juvenile manufacture, hafted bifaces and/or knife blades, T-shaped drills, hafted scrapers, and a large debitage sample, the majority of which relates to biface reduction and tool refurbishing.

The preliminary inventory of the faunal sample completed by Stephen Cox Thomas, of *Bioarchaeological Research Associates*, has resulted in the identification of cranial and distal appendicular elements of white-tailed deer, beaver, muskrat, raccoon, large canis, bear, grey squirrel and chipmunk. Bird species include swan, large raptor, probably eagle, grouse, and a few elements of passenger pigeon and grouse. Among the abundant fish remains are sunfish (blue gill), sucker (redhorse), minnows, bullhead, and, surprisingly, several lakefish varieties such as cisco and whitefish. Thomas also identified snapping turtle, painted or box turtle, and bullfrog. Perhaps most surprising, however, in addition to the ubiquity of lake fish, was the identification of a sizable sample of eel bones, a rare, if not improbable, find for the Lake Erie watershed. It therefore seems more likely that eels were transported from the west end of Burlington Bay to the Grand River area.

The analysis of plant remains from the site has led Stephen Monckton, of *Bioarchaeological Research Associates*, to suggest that maize was no less important to the diet of the site's inhabitants than it was to later Iroquoian populations. In addition to several wild plant species, Monkton also documented a number of tobacco seeds from secure contexts.

In summary, the Holmedale site assemblage is extensive and although only partial analysis has been conducted to date, it holds significant promise for enhancing our understanding of this period in Ontario prehistory, which has again become a period of renewed attention among researchers (*e.g.*, Crawford and Smith 1996; Snow 1995, 1996; Smith and Crawford 1997).

THE ULSTERMAN SITE

Salvage excavations carried out under the project direction of Ronald Williamson and the field direction of David Robertson were completed at the early- to mid-19th century Ulsterman site (AjGw-258) in the Village of Meadowvale (now in the City of Mississauga). The farmstead was initially occupied by Joseph Carter, one of the Northern Irish immigrants who established Meadowvale village in the 1820s. Carter did not pursue this venture, however, and the process of clearing the land

was continued by William Bell, who had constructed a home and outbuildings on the property by 1836. William Bell's son, Hugh, held the patent for the lot from 1851 to 1865.

Archaeological investigation of the site began with the excavation of a series of one-metre square test units to determine the nature and extent of cultural deposits in the plough zone. As a number of significant cultural deposits were partially exposed within the hand-excavated one-metre squares, further archaeological mitigation was undertaken involving the removal by Gradall of all topsoil within the site area. The 21 settlement features thus exposed, included a boulder-filled well and a root cellar furnished with a wooden floor and a French drain. The cellar had been filled in with demolition rubble, presumably from the associated superstructure. The remainder of the features encountered consist of generalized refuse pits, ash or cinder pits the remnants of a possible wall slot or trench, a possible refuse filled depression and a series of deep, flat-bottomed post pits that may represent the remains of a fenceline marking the eastern limits of the habitation area. Many of these post pits were filled with refuse and midden soil, suggesting the removal of the fence was followed by infilling of the post holes with soils derived from a primary midden area.

Over 2,000 artifacts were recovered from the site, with the greatest frequencies in all classes being derived from the root cellar. The artifact collection includes ceramics, food bone, white clay pipe fragments, window glass, metal fasteners and other architectural artifacts, articles of clothing and personal adornment, glass container fragments, metal pieces, and numerous household items such as bone handled cutlery. While a small percentage of the artifact assemblage may be related to the early 19th century Carter occupation, this material was not recovered from primary contexts. Carter's occupation of the property was apparently brief and is unlikely to have resulted in the creation of more than a few ephemeral features that would have been obliterated either by the subsequent occupation or by agricultural activity.

THE CHIPPAWA LANDS MANAGEMENT PLAN

ASI was retained by *Addison Consulting Services* to conduct a Stage 1 and 2 Archaeological Resource Assessment of the proposed Chippawa Lands Management Plan located in the City of Niagara Falls. The Chippawa Lands are those upon which the Battle of Chippawa was fought, in July of 1814, during the bloody Niagara Frontier campaign. The main objectives of the field investigations were the assessment of lands within 150 metres of Usshers Creek and the Niagara River to identify any prehistoric or historic sites; and to conduct a strategic survey of areas of high potential for historic resources related to the events of the battle, the course of which has been subject to detailed study (Graves 1992, 1994).

The survey resulted in the documentation of eight archaeological sites and 18 findspots. Only one isolated find, that of a .69 inch musket ball, can be associated with the Battle of Chippawa. The majority of historic archaeological sites and findspots that were identified during the survey were directly related to late 19th and early 20th century agricultural land use. To a certain degree, the lack of material recovered from the property that may be associated with the events of the battle is likely a consequence of many years of intensive relic-hunting with metal detectors.

There were numerous prehistoric sites and findspots documented within 100 metres of Usshers Creek, the Niagara River, and small relic watercourses. These sites and findspots

represent the repeated use of the property by small hunter-gatherer bands during the Archaic period. While they are not large and complex sites, they do contribute important information regarding the seasonal schedule of such groups.

RED HILL CREEK WATERSHED PLAN

The Red Hill Creek Watershed Plan is intended to identify an overall strategy that will address planning, management and stewardship issues regarding all lands encompassed by the watershed in the cities of Hamilton and Stoney Creek, and the Township of Glanbrook. One component of the overall study was the preparation of an inventory of the cultural heritage of the watershed in order to gain an accurate understanding of the human-land relationship(s) in the Red Hill Creek drainage from the distant prehistoric past through to more recent historic times. Completed by *ASI* in association with David Cuming, of *Unterman McPhail Cuming Associates Heritage Conservation and Planning Consultants*, this inventory compilation included a review of all archaeological sites to have been registered within the watershed, together with the development of an archaeological potential model, the development of a thematic overview of the history of the area, as well as a field survey to identify representative built heritage features and cultural landscape units. Within the watershed, a total of 113 archaeological sites have been registered. These include two Late Palaeoindian (*ca.* 8,000 B.C.), six Early Archaic (*ca.* 7,000-6,000 B.C.), four Middle Archaic (*ca.* 6,000-3,000 B.C.), 13 Late Archaic (*ca.* 3,000-1,000 B.C.), three Early Woodland (*ca.* 1,000-400 B.C.), three Middle Woodland (*ca.* 400 B.C.-A.D. 600), three Transitional Woodland/Princess Point (*ca.* 600 A.D.-800 A.D.) and 12 Late Woodland occupations. The majority of the latter date to the Early to Middle Iroquoian periods (*ca.* A.D. 900-1300). Notwithstanding the variable nature of previous archaeological survey of the Red Hill Creek watershed, a notable gap in the archaeological record is the comparative absence of large Late Woodland period villages, particularly for the period post-dating *ca.* A.D. 1300. Thirty of the components in the inventory represent historic period occupations, many of which occurred in locales previously occupied by the prehistoric populations of the region. Most of these Euro-Canadian sites are associated with the agricultural settlement of the watershed in the 19th century. Intensive archaeological survey and site excavations are scheduled to take place in those portions of the Red Hill Creek valley that will be affected by the construction of the Red Hill Creek Expressway.

Unlike many major creek or river systems that drain into Lake Ontario, Burlington Bay, or Hamilton Harbour, the Red Hill Creek watershed is generally characterized by a modest body of above-ground cultural heritage. The Red Hill Creek is not noted for monumental bridges such as those that cross the Bronte Creek or the Credit River. Neither is it renowned for any vast industrial complexes that have developed along its banks. Furthermore, much of the rural cultural heritage of the watershed has been obscured by urban development. The overwhelming majority of built heritage features identified during the study are associated with the agricultural settlement of the watershed and include farm houses, cemeteries and schools. These were found in a number of locations, including the older settled portions of Hamilton, the newly developed areas of Stoney Creek and the urban-rural fringe in Glanbrook.

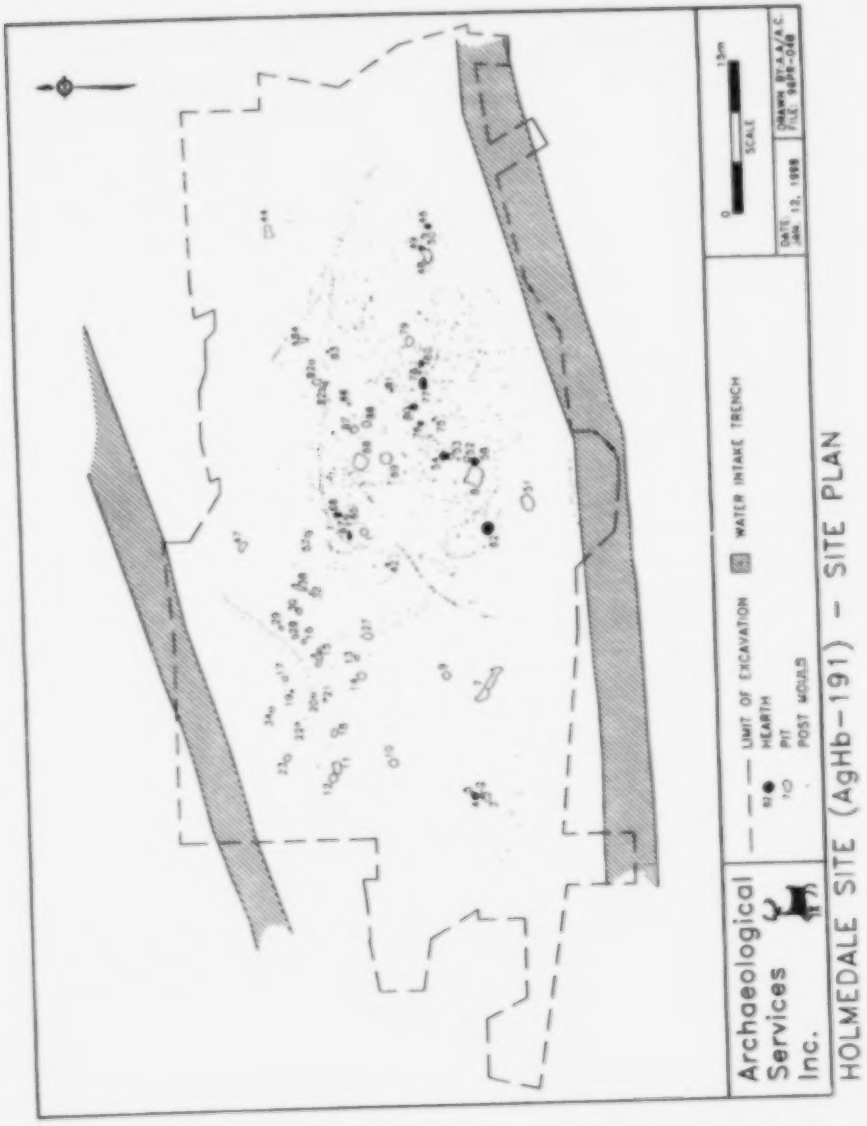

Figure 1.Settlement Patterns at the Holmedale Site (AgHb-191), City of Brantford, Ontario.

The 36 representative cultural landscapes surveyed as part of this study are closely associated with transportation development, township surveys, early agricultural settlement, the growth of settlement centres (especially at cross-road locations) and industrial activity, such as quarries and milling sites. One of the most notable cultural landscape units in the watershed is that formed by the City of Hamilton Waterworks. Located in the former Township of Saltfleet, and completed in 1859, the Waterworks helped catapult the emerging City of Hamilton into a major industrial centre. The complex is recognized to be of national and international significance.

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CONSULTING ACTIVITIES OF SETTLEMENT SURVEYS LIMITED IN NORTHERN ONTARIO

JOHN POLLOCK

Settlement Surveys Limited is an archaeological consulting firm incorporated in 1979 with its main office in New Liskeard, Ontario. Regional representatives are Mike O'Connor at Sault Ste. Marie and Mike McLeod at Thunder Bay. Dr. John Pollock is the manager of the firm that undertook eighteen projects during 1996 in the Long Lac, Hearst, Cochrane, Moose River, Lake Timiskaming, North Bay, Thessalon, Sault Ste. Marie and Bracebridge areas. This work resulted in the registration of seven new archaeological sites. Two staff members and one student were involved in these activities. One of the more interesting projects in the Sault Ste. Marie area is described below.

ARCHAEOLOGICAL ASSESSMENT OF THE CLERGUE BLOCKHOUSE, SAULT STE. MARIE, ONTARIO

This project involved excavations on the site (CdIc-1) of a former North West Company (and Hudson's Bay Company) fur trading post, occupied from about 1799 to 1823 and again from 1842 to about 1865, when they abandoned the site.

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The Blockhouse and foundation date to 1819 with the upper portion constructed by Francis Clergue in 1894-1895. An area around the Blockhouse was tested by means of sixteen one x 2 metre or larger subsurface pits (every 5 metres). Archaeological materials were concentrated in units 1, 2, 8, and 9 with the majority of artifacts recovered from unit one on the west side of the building. The work was undertaken by John Pollock, Mike O'Connor, Patrick O'Connor and Joel Roswell.

BRIEF HISTORY OF SAULT STE. MARIE AND THE FUR TRADE POSTS

The first European to arrive at Sault Ste. Marie was probably Etienne Brule in the early 1600's. Champlain's map of 1632 also shows an Indian Village where Sault Ste. Marie now stands. By the time of the Joliet map of 1674, the village was called in French *Sault Ste. Marie* or "Rapids of the St. Mary" in English (Reid 1977:5). The Anishnabek name for the place was "*Bouveting*" which means turbulent waters or place of the rapids (HBC archive documents).

In the late 1700's and early 1800's, Sault Ste. Marie was a fur trading post of the North West Company. Historical records dating to 1784 describe a J.B. Cadot who had a permit from the company to trade a value of

up to 1,000 pound sterling at Sault Ste. Marie (Davidson 1967:24). A post at the rapids had been established the year before (Mika 1977:356). In 1821, the Hudson's Bay Company established a post replacing the North West Company.

Following the fur traders came the loggers and lumbermen who created a thriving industry during the 1800's throughout the area. In the late 1800's, there was considerable interest in mining, especially copper mining and quarrying. This was followed by the modern settlement era as farming steadily increased after 1846, when European settlers could obtain lands for homesteads. The mid-nineteenth century settlers were also involved in the fur trade.

It was not until 1887 that Sault Ste. Marie was incorporated as a town and in 1912, became a city.

In 1965, the City of Sault Ste. Marie amalgamated the Township of Korah and Tarentorus, the municipality to the east which was adjacent to the Batchewana First Nation.

By the turn of the century, Sault Ste. Marie had become an important transportation and shipping centre with industrial development of steel, pulp and paper, iron ore, and electric power development (Mika 1977:358).

FRANCIS H. CLERGUE AND THE BLOCKHOUSE

In 1894, Francis H. Clergue, a businessperson and lawyer, passed through Sault Ste. Marie and recognized the potential development opportunities. He purchased the present St. Mary's Paper Ltd property from the Hudson's Bay Company and restored a stone powder magazine dating to the 1819 use of the site by the North West Company (Commonwealth Historic Resources Management Limited 1986:6). At Sault Ste. Marie, Clergue built both a power house (Tagona Water and Light Company) and a pulp mill (Sault Ste. Marie Pulp and Paper Company). While he was living in the renovated powder magazine that he rebuilt to resemble a blockhouse, Clergue also built the Algoma Central Railway Company and Canada's first steel manufacturing company, the Algoma Steel Company (Historic Sites and Monuments Board of Canada ND: 49-55).

Figure 1. View of Clergue Blockhouse, Looking North. August 1996 - original location at St.Marys Paper Ltd.

The Historic Sites and Monuments Board of Canada's report summed up Francis Clergue's achievements (page 55) as follows:

> Clergue's achievements at Sault Ste. Marie are unique in Canadian industrial history. He was the first in a line of industrial promoters of the Laurier era. He transformed Sault Ste. Marie from a small isolated community in the barren Canadian Shield into a large industrial complex. Parts of the complex endure today as shining examples of Canadian industrial efficiency and knowledge. His pulp and paper mills evolved into the Abitibi-Price Corporation, the current St. Marys Paper Inc., the largest newsprint producer in the world, and the Algoma Steel Corporation is part of Canada's world-class, modern steel producing industry.

Further details on the architectural

and historical significance of the Clergue Blockhouse are available from the 1985 Commonwealth Report (Commonwealth Historic Resources Management Limited 1986:) and other documents on file at Sault Ste. Marie LACAC and Heritage Sault Ste. Marie.

DESCRIPTION OF PROPOSED MOVING OF BLOCKHOUSE AND THE ST. MARYS PAPER LTD. PLANT EXPANSION

The Blockhouse (Figures 1,2) has been designated by the Sault Ste. Marie LACAC as an historic building and registered as an archaeological site (CdIc-1) under the Borden site system with the Ministry of Citizenship, Culture and Recreation.

One impact to the building and buried archaeological materials was the September 1996 move of the upper story of the Blockhouse. They fabricated a cradle and lifted the upper portion by cranes to temporary storage on a flat, grassy area near the St. Marys Paper security gate house.

The stone foundation down to surface or grade level was numbered, removed and reconstructed on the Ermatinger Old Stone House property (831 Queen Street East). When the new foundation was ready, the Blockhouse was moved from St. Marys to the Ermatinger location where it now sits (personal communication: Chris Tossell to John Pollock).

The reason for the Blockhouse move was to facilitate St. Marys Paper Ltd's expansion of their present paper machine plant. The expansion entailed the building of a machine/equipment section onto the existing plant that required the complete destruction of the original Clergue Blockhouse site including the below ground original 1819 stone foundation and the remnant portion of the former NWCo/HBC post site. Any remaining archaeological material from this site (which has already been disturbed due to its location in an one hundred-year-old active industrial area) has now been lost.

RESEARCH PLAN AND METHODOLOGY

As no archaeological testing had previously been undertaken in the vicinity of the Blockhouse (despite several historical/architectural studies) and as Thor

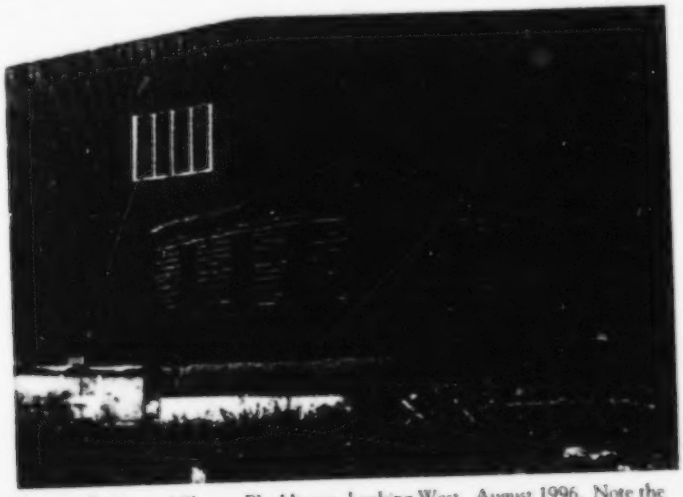


Figure 2. View of Clergue Blockhouse, Looking West. August 1996. Note the heavy machinery and parts parked on the site.

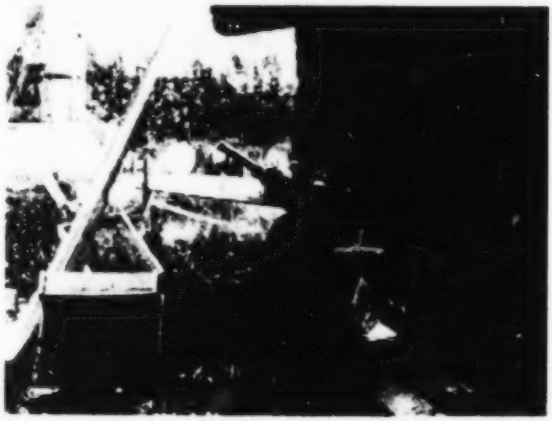


Figure 3. Archeological Subsurface Testing Underway at Test unit 1, West Wall of Clerque Blockhouse (CDlc-1), August 1996.

Conway in his 1975 registration of the site under the Borden Site system (as #CdIc-1) remarked that "There might be areas of the site intact under the lawn and parking lot"; Heritage Sault Ste. Marie decided to undertake a preliminary archaeological assessment to ascertain if any valuable archaeological materials or other buried artifacts existed near the Blockhouse. These materials would otherwise be lost due to the planned move of the Blockhouse and the St. Marys plant expansion.

Heritage Sault Ste.Marie retained Settlement Survey Ltd to undertake a Stage Two archaeological assessment that consisted of a test pit subsurface survey intended to provide information on the extent, condition, age and nature of buried archaeological materials and features associated with the Clergue Blockhouse. In order to undertake this work, sixteen 1 x 2 metre test pits, placed at five metre intervals, were excavated in 10 centimetre levels (Figure 3) and screened to sterile subsoil (at various depths of up to 1 metre).

STUDY RESULTS AND ARTIFACT RECOVERIES

Stratigraphy at the site (Figure 4) consists of a top 20 centimetre thick layer of black organic soil containing artifacts from the past 100 years or the industrial/residential period use of the Blockhouse. Below this top 20 centimetres is another 10-20 centimetre thick layer of dark grey/brown sandy silt and ash that contains charcoal, bones, brick fragments, clay pipes, square nails and other artifacts relating to the fur trade posts that existed on the site during two periods from 1799-1823 (NWCo) and from 1842 to circa 1865 (HBC). Below the silt, which may have been "brought in" during the 1819 construction of the NWCo powder house, is some 40 to 50 centimetres of unconsolidated sand and gravel with large cobbles that increase in size and density at greater depths. At the top of this layer, which appears to be the original site surface at the time of the arrival of the Europeans, eleven flint artifacts relating to First Nations use of the site were recovered. These no doubt relate to pre-European use of the site by Native Peoples for camping likely associated with either a former

portage around the rapids and/or a fishing camp.

ARTIFACT RECOVERIES

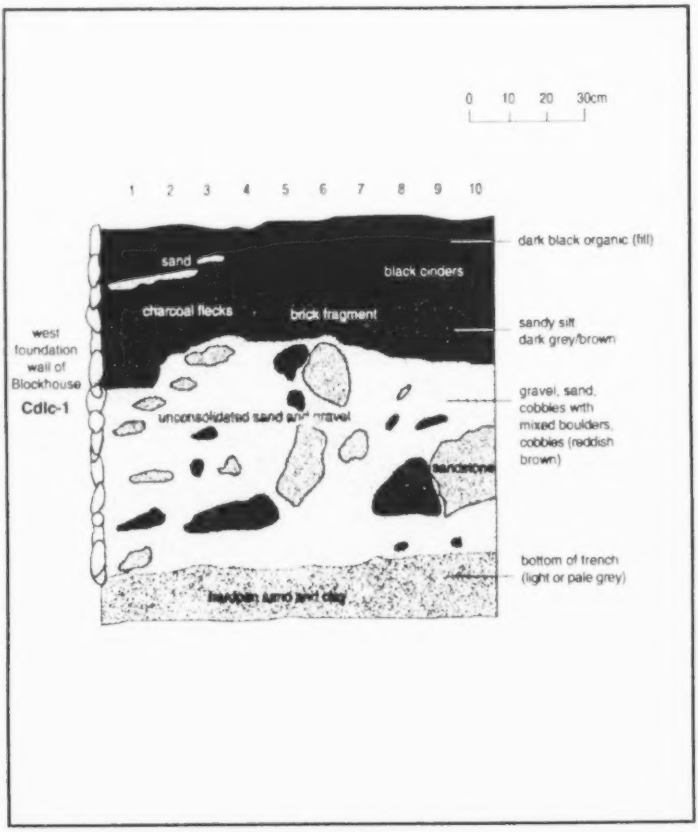
The 1996 work resulted in the recovery of the following artifacts from sixteen 1 x 2 metre test pits at CdIc-1. Unit one was larger than the others being 2 x 4 metres in size.

TABLE 1.
SUMMARY OF ARTIFACTS COLLECTED FROM THE CLERGUE BLOCKHOUSE, CdIc-1, AUGUST 1996

Artifacts Collected	Number Collected
Bone Fragments	39
Window Glass Fragments	277
Ceramics	82
Beaver Skull	1
Rusty Square Cut and Round Nails	174
Rock Specimens	2
Copper Coin	1
Clay Pipe Fragments	23
Bottle Glass	48
Mica Sheets	2
Paper	1
Mortar Fragments	5
Miscellaneous Historical Items	19
Horseshoe	1
Stoneware	23
Cigar Holders	2
Misc. Iron Items	14
Buttons	2
Prehistoric Chert Flakes	11
Brick Fragments	3
Misc. Burned Items	5
TOTAL ARTIFACTS RECOVERED	735

SUMMARY REMARKS

Our 1996 report (Settlement Surveys Ltd 1996) recommended that the moving of the upper portion of the Clergue Blockhouse be allowed to continue with no further archaeological work by Heritage Sault Ste. Marie, the volunteer organization undertaking the move. However it also recommended, since the remainder of site CdIc-1 was to be destroyed following the removal of the above and below grade 1819 stone foundation of the Clergue Blockhouse, that archaeological stage three mitigative excavation of a minimum 10 square metre area take place on the west side of the building before any further site disturbance (except for removal of the upper portion). We also recommended monitoring of initial site preparation work by St. Marys Paper. The main areas of interest or concern were in the vicinity of the east foundation wall of the Blockhouse, and the area underneath the floor of the building. Unfortunately, none of this recommended mitigative archaeological work was



[42]

Figure 4. South Facing Stratigraphic Profile Near Unit 1, CdIc-1.

SUMMARY REMARKS

Our 1996 report (Settlement Surveys Ltd 1996) recommended that the moving of the upper portion of the Clergue Blockhouse be allowed to continue with no further archaeological work by Heritage Sault Ste. Marie, the volunteer organization undertaking the move. However it also recommended, since the remainder of site CdIc-1 was to be destroyed following the removal of the above and below grade 1819 stone foundation of the Clergue Blockhouse, that archaeological stage three mitigative excavation of a minimum 10 square metre area take place on the west side of the building before any further site disturbance (except for removal of the upper portion). We also recommended monitoring of initial site preparation work by St. Marys Paper. The main areas of interest or concern were in the vicinity of the east foundation wall of the Blockhouse, and the area underneath the floor of the building. Unfortunately, none of this recommended mitigative archaeological work was

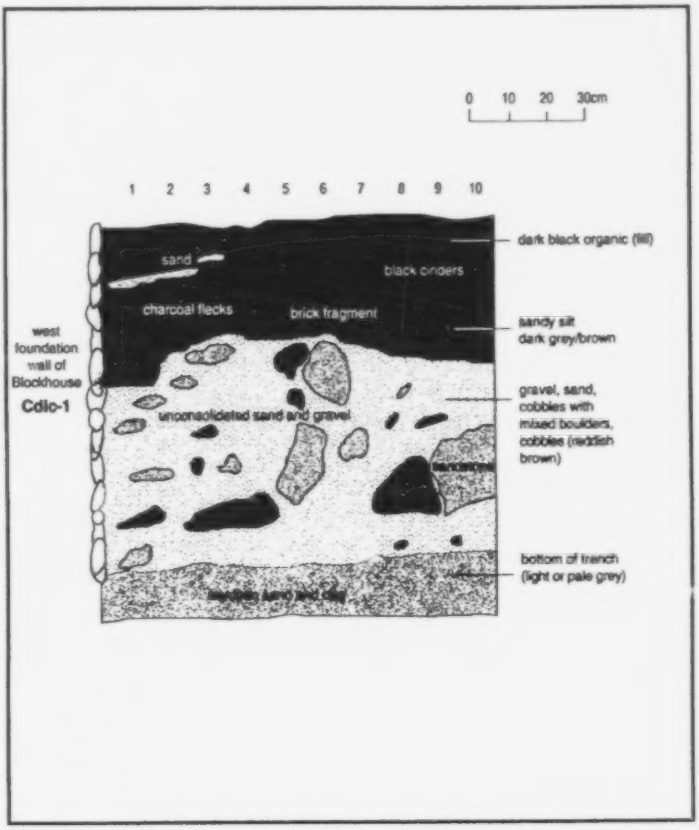


Figure 4. South Facing Stratigraphic Profile Near Unit 1, CdIc-1.

undertaken by either St. Marys Paper or the Heritage Sault Ste. Marie organization and any additional archaeological information has now been lost.

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SUMMARY OF 1996 CONSULTING ACTIVITIES OF D.R. POULTON & ASSOCIATES INC.

DANA R. POULTON AND RICHARD E. SUTTON

The archaeological consulting firm of D.R. Poulton & Associates Inc. is based in London and operates under the direction of Dana Poulton. The firm also has a Burlington office, managed by Rick Sutton. In addition to three permanent staff members, 14 people were employed by the firm on a seasonal basis in 1996.

During 1996, the firm conducted 34 separate archaeological resource management studies. These involved 15 separate counties and regional municipalities spanning south-central and southwestern Ontario, from the St. Clair and Detroit Rivers east to Durham Regional Municipality, and from Lake Erie and Lake Ontario north to Simcoe County and the Bruce Peninsula. Four of the projects were limited to Stage 1 background research; the remaining 30 involved field work. The latter included 23 projects which involved Stage 2 field assessment, 11 projects which entailed Stage 3 test excavations, and four projects which involved Stage 4 mitigative excavations.

Altogether, 109 archaeological sites were investigated in 1996. Of these, 99 represent previously unknown sites discovered by the firm. Thirty-nine of these were registered in the course of the investigations by the firm; the remaining 60 were not considered to be significant enough to register. A Stage 2 level of assessment was conducted on 101 sites by D.R. Poulton & Associates in 1996. More extensive Stage 3 test excavations were carried out on 19 sites, and full Stage 4 mitigative excavations were conducted on eight sites.

The activities carried out in 1996 encompassed a range of assessments in fulfilment of legislative requirements. These included 26 draft plans of subdivision, four natural gas pipeline projects, two municipal parks and a secondary plan.

The following presents a brief profile of 4 projects undertaken by the firm in 1996. In each case, the investigations were carried out under the general direction of Dana Poulton in the capacity of Consulting Archaeologist.

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VICTORIA PARK MASTER PLAN

In 1995, the City of London initiated a long-term study to determine the future of Victoria Park, the oldest public park in the municipality. The first step in the Victoria Park master plan was carried out by a study team headed by Sylvia Behr, Landscape Architect. It focussed on an inventory of the natural and cultural heritage of the property, and an assessment of current conditions.

Further investigations continued in 1996 by a study team headed by Hough, Woodland, Naylor Dance Limited, and involved the identification of opportunities and constraints, together with the preparation of a restoration master plan. In both cases, archaeological expertise was provided by D.R. Poulton & Associates.

Victoria Park is located in the heart of downtown London. The property covers a 6.3 hectare area of mature trees, green grass and winding paths. It is flanked to the south by London Life Insurance building, to the southeast by City Hall and Centennial Concert Hall, to the northeast and north by stately old mansions, and to the west by the fashionable Richmond Row shopping district. The park serves as the location for many of London's major events, including the annual Home County Folk Festival, Children's Festival and Sunfest. Unfortunately, the pressure of all of these events, combined with the effects of an aging infrastructure, have taken their toll on the health of the park. It is these conditions which occasioned the need for a master plan for Victoria Park.

Archaeological investigations to date have consisted of a detailed Stage 1 background study to reconstruct past land use and the potential for extant archaeological resources. Much of this effort has focussed on the period of the mid 19th century, when Victoria Park was the site of the Framed Infantry Barracks and Drill Ground, an integral part of the British Military Reserve established in London following the Rebellion of 1837. The British Garrison was based in London from 1838 to 1853, when troops were withdrawn to be sent to the Crimean War. In 1855, during the interim between the two garrison periods, the empty barracks were used as temporary housing for 700 escaped slaves who had followed the Underground Railroad from the United States. The garrison was reestablished in 1861 in response to concerns over the security of the border during the American Civil War, and continued concerns for the security of Canada West during the Fenian Raids, until the troops were finally withdrawn in 1869. In the 1870s, plans were formulated to transform the property into London's first public park, and the noted horticulturalist Charles Miller was engaged to design it. Subsequent changes within the property relate to the development and evolution of the park.

Prior to the Victoria Park study, the only archaeological investigations which had ever been carried out in the property involved the monitoring of the construction of a new bandshell in 1990 (ASI 1991). That bandshell replaced a previous bandshell built in 1950, which in turn stood upon the site of a service building of the 1920s, and greenhouses of the 1890s. While no archaeological remains of demonstrable significance were identified by the 1990 monitoring, the nature and significance of below-ground heritage resources within the balance of the property remained to be determined.

Research carried out by the present study indicated that Victoria Park had a high potential for a wide variety of significant archaeological resources. Most notable of these were the remains of the several dozen different buildings and other structures which formed part of the Framed Infantry Barracks. These included stockades, officers' quarters, soldiers' quarters, magazine, hospital, dead house and straw shed, offices, cells, guard house and defaulters room, engines room, stables, cook houses, wash houses, wells, privies, drains and cess pools. The most substantial of these were the soldiers' quarters, constructed to house 720, and the officers' quarters. In their day, these were two of the largest buildings in London. The evolution of the property as a public park involved the

development of pathways and carriageways, and the formation of other features for the recreation and enjoyment of the city's populace. Over the past 117 years these have included bandstands, bandshells, tennis lawns, a miniature golf course, a putting green, shuffleboard courts, skating rinks, fountains, monuments and memorials, greenhouses, and a lily pond.

A conventional approach to archaeological resource management within recent years in Ontario has been the incorporation of significant archaeological sites within proposed park lands (eg., see ShurGain site, below). Ironically, the creation of Victoria Park in the 1870's ensured that the property thereafter was reserved for relatively passive land uses, and this effected the preservation of the archaeological remains of the Framed Infantry Barracks complex. A proper assessment of those remains will have to await detailed field survey. However, preliminary indications are that the park represents the single largest and most significant historic archaeological site in the City of London.

SHURGAIN PREHISTORIC VILLAGE SITE

In 1996, D.R. Poulton & Associates completed a multi-year project involving the ShurGain site (AlGv-39). This site is located within the proposed community park of the 86 hectare McKenzie Glen Community Plan, just northwest of Maple in the City of Vaughan. It occupies a terrace at the confluence of a tributary stream and the Don River.

The ShurGain site was discovered in 1987 during the course of the archaeological plan study of the Town of Vaughan. Investigations carried out at that time under the direction of Christine Dodd and Dana Poulton involved a controlled surface examination and systematic test pitting. These established that the site was a Late Iroquoian village dating ca. 1450-1500 A.D. (Mayer, Poulton and Associates 1989).

Previous archaeological investigations elsewhere within the Mackenzie Glen Community Plan included Stage 1 background research, Stage 2 field survey, a Stage 3 test excavation of a reputed prehistoric burial ground located west of the Don, and a Stage 4 salvage excavations of three historic homesteads located east of the Don River. While these satisfied archaeological planning concerns for the balance of the subject lands, it remained to address concerns for the ShurGain site, the single largest and most significant site within the proposed development.

Options for mitigation of the ShurGain site were reviewed at a meeting in August of 1992 with various stakeholders. These included representatives of the City of Vaughan, Maple Leaf Foods (the development proponent), Pound Stewart Stein (the planning consultant), the Ministry of Culture, Tourism and Recreation, and D.R. Poulton & Associates. As a result, the preferred option identified for the ShurGain site was preservation by capping under a layer of geotextiles and clean topsoil. Although capping has been proposed for a number of large archaeological sites over the past decade, the ShurGain site represents the first application of this means of preservation for an Iroquoian village.

Ministry staff, in conjunction with the consultant, identified a series of tasks necessary for a more complete assessment of potential archaeological concerns relating to capping. These tasks were implemented over a three year period, 1992-1995. The single most important of these consisted of Stage 3 test excavations in the agricultural field along the northern and western peripheries of the

site, the only two sides of the site which were not delimited by natural topography. These were necessary to confirm whether the site limits defined by surface artifact distributions represented an accurate reflection of the extent of underlying subsurface remains. The test excavations were carried out in the fall of 1992 under the direction of Mark Borland and Michael Henry. These involved a series of eight four-metre-wide test trenches to transect the site the site limits as defined by surface examination. The results demonstrated that the site represented a small palisaded village, 0.7 hectares in size. Subsurface remains and surface artifact distributions extended a further distance of 20-25 metres beyond the palisade, encompassing an addition area of 0.28 hectares. Altogether, these investigations provided the confirmation of site limits necessary for effective planning.

By the early summer of 1996, the development of adjacent subdivision lands had proceeded to the point where the proposed capping of the prehistoric village could take place. The area of concern for the capping incorporated the entire 0.97 hectare area encompassing surficial and subsurface remains, together with a 10 metre buffer zone.

The capping of the ShurGain site was accomplished over a four day period from June 11 to 14, 1996. This work was accomplished on behalf of Graywood Developments Limited, and was monitored by Kevin Fisher under the supervision of Rick Sutton. The capping involved a series of tasks, beginning with the driving of systematic transects over the site by a small bulldozer to flatten the overgrowth of weeds. Five metre wide rolls of geotextile were then applied over the entire site area to ensure a permanent separation of the capping fill from the underlying archaeological deposits. The fill was then deposited by hand within the assistance of small bulldozers, to minimize the potential for compaction and rutting of the archaeological deposits. The final process was to use small bulldozers to grade the fill according to plan: the depth of fill varied from 50 cm to 1 metre.

Altogether, the archaeological investigations of the ShurGain site spanned a 10 year period, from the initial discovery and assessment in 1987 through to the capping in 1996. The mitigation of this site by preservation rather than salvage excavations means that much remains to be learned about its role in the Huron-Petun developmental sequence of the upper Don River drainage system. However, the investigations of the site do offer useful insights into the different ways in which Iroquoian village size can be both measured and determined. Moreover, the preservation of the site by capping within the community park means that it will continue to be survive as an archaeological resource for future generations of the citizens of Vaughan and the province of Ontario.

THE LADYWOOD SITE

In May, 1996, a crew under the direction of Rick Sutton carried out a systematic Stage 2 test pit survey of a 14 hectare forested property on the south shore of Kempenfeldt Bay east of Barrie. The assessment resulted in the discovery of an undisturbed Iroquoian component which was designated the Ladywood site (BcGv-19). This site is tentatively identified as a Late Iroquoian fishing camp dating to sometime within the period ca. 1280-1550 A.D. Fieldwork was confined to an intensive test pitting of the entire site area, followed by Stage 3 test excavations of 38 one metre squares along the southern periphery of the site.

The results of these investigations indicate that the Ladywood site is at least 0.3 hectares in size. The site occupies a sandy terrace overlooking a small beach on

Kempenfeldt Bay. A total of 202 prehistoric artifacts were recovered from the site. Excluding a juvenile vessel, the analyzable rim sherd sample is limited to the following pottery types: one Ontario Horizontal, one Huron Incised, and one Middleport Oblique.

With the evidence at hand, the precise age and function of the site is difficult to determine. However, investigations to date strongly suggest that the site represents a Middle to Late Iroquoian fishing camp. This interpretation is based on the nature of the recovered artifact sample, the relatively small size of the site, and its location near the shore of Kempenfeldt Bay. Very few Iroquoian fishing camps have been identified to date in this area. In fact, if further work substantiates these interpretations, the Ladywood site would represent one of the largest known undisturbed Iroquoian fishing camps in the region. As such, this site is an extremely important archaeological resource.

CLAIRFIELDS DEVELOPMENT

In the spring of 1996, D.R. Poulton & Associates carried out a Stage 1-2 assessment of the proposed Clairfields development, a 75 hectare proposed subdivision in the southeast portion of the City of Guelph. The property consisted almost entirely of active agricultural lands and included an occupied house and farm building complex, as well as the ruins of two other farm building complexes. A wetland area associated with the headwaters of Hanlon Creek is situated in the northwestern corner of the property.

Conditions for archaeological survey throughout the property were ideal, as all of the agricultural lands had been ploughed the previous fall, and had weathered over the winter. The survey under the direction of Rick Sutton discovered a total of 28 archaeological sites. Two of these were 19th century Euro-Canadian homesteads; the remaining 26 consisted of prehistoric lithic scatters or camp sites and isolated finds.

Following Ministry guidelines, 14 of the sites were registered. Further investigations followed on six sites. These included Stage 3 controlled surface collections on five lithic scatters, the excavation of one metre test squares on four of the sites, Stage 4 block excavation on one site, and Stage 4 mitigative excavations by Gradall on three sites. Excavations proceeded from late October into mid December, beyond the onset of winter, and were facilitated by the use of heated shelters to enable the completion of the mitigation before the end of 1996.

Two of the sites mitigated in 1996 consisted of mid 19th century homesteads. The investigations indicate that these sites represented the respective homesteads of contemporary neighbours. One of these was the Carter site (AiHb-182). Archival research indicated that the Crown patent for the lot occupied by this site was granted to John Carter in 1850. The property remained in the Carter family until the end of the 19th century. Stage 4 excavations of this site revealed that it contained a root cellar, two refuse-filled depressions and five post moulds. The excavation of the root cellar recovered a large quantity of material, including ceramics, pipe fragments, metal, glass and bone. The ceramics were dominated by sponge ware, followed by transfer-printed white ware and banded ware. Several coins were also recovered which dated from the 1840s to the 1860s. Altogether, these remains indicate that the Carter site represented the first homestead on the property.

The other historic component was the Patterson site. It is located on the lot immediately to the south of the Carter site. The Crown patent for this property was granted to John Patterson in 1853. It

remained in the family until the 1870s. Stage 4 excavations of this site uncovered a root cellar, two refuse pits, five refuse-filled depressions and six post moulds. The decorated ceramics are dominated by transfer-printed white wares and sponge ware. As with the Carter site, these remains indicate that the Patterson site represented the first homestead on the property.

One of the prehistoric sites which was subjected to more detailed investigations was the Gossling site (AiHb-189). An intensive controlled surface collection of this site at one metre intervals had established that it comprised a diffuse lithic scatter. This remains a total of 17 pieces from a 50 by 20 metre area, for an artifact density of only 1 piece per 55 square metres. In addition to chert debitage, the surface collection included two end scrapers, a side scraper, a drill and a wedge. Four of the specimens had been burnt. None of these remains were diagnostic of a particular age or culture, and all but one of the specimens was of Onondaga chert. The exception was a piece of shatter of Haldimand chert. Although artifact densities were too low to warrant the excavation of one metre test squares, the presence of formal tools as well as thermally altered artifacts suggested some potential for subsurface cultural remains. Accordingly, the ploughzone overlaying the site was stripped by Gradall under archaeological supervision. This was carried out on October 23. Shovel-shining of the ploughzone-subsoil interface recovered the base of a fluted projectile point of Onondaga chert. This specimen is of the Early Paleo-Indian Barnes type, the diagnostic point type of the Parkhill Complex, and dates *ca.* 8700 B.C.

Comparisons suggest that the Barnes point from the Gossling site pertains to interior hunting activities by a small group of Early Paleo-Indian. The context for the fluted point from the Gossling site is difficult to interpret, but investigations throughout the Clairfields property identified a whole series of isolated finds and hunting camps spanning several millennium. In chronological order, these include the Early Paleo point from the Gossling site, an isolated find of a point of the Early Archaic Big Sandy type from AiHb-183 (*ca.* 8000-6000 B.C.), two camps of the Early Archaic Nettling Culture (*ca.* 7800-7000 B.C.) (AiHb-180 and AjHb-34), the isolated find of a point of the Bifurcate Base Tradition from AiHb-180 (*ca.* 6900-6000 B.C.), and separate occurrences of points of the Late Archaic Lamoka Side-Notched type (AiHb-184) and Genesee type (AiHb-178). Altogether, these remains demonstrate that the vicinity of the Clairfields property was a popular hunting area for generations of people during the early prehistoric period.

The City of Guelph only began participating in archaeological draft plan review in the mid 1990s. Accordingly, this area is just now beginning to benefit from larger scale archaeological surveys. It may be anticipated that our knowledge of the prehistory of the area will advance significantly, as more and more proposed developments are subject to assessment in the years to come.

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MINISTRY OF TRANSPORTATION - ARCHAEOLOGICAL INVESTIGATIONS IN THE CENTRAL AND EASTERN REGIONS, ONTARIO

GARY WARRICK

In December of 1996, the Ministry of Transportation (MTO) decided to privatize its archaeological work. Consequently, the Archaeology and Heritage Unit of (MTO), Central Region was eliminated and all of the staff, save one, were declared surplus. Unless conditions change, this will be the final fieldwork report from Central Region, MTO.

Archaeological staff of Central Region, Ministry of Transportation (MTO), conducted eight assessments in 1996. A total of 45 new sites and diagnostic isolated finds were discovered. This report highlights the results of archaeological fieldwork on Highways 3(Port Colborne), 6(New) (Ancaster), and 407/Transitway (Markham), 407W (Burlington-Oakville), Central Region and Highway 33 (Bath-Adolphustown), Eastern Region.

HIGHWAY 3 (PORT COLBORNE-GASLINE)

Directed by Phil Woodley, a portion of Highay 3, between Highway 140 and Gasline, was assessed. Two significant sites were investigated. The first, Ott 5 (AfGt-59), was registered in 1984 by James Pengelly. MTO work determined that it is a large, multi-component workshop/lithic reduction camp. Controlled surface collection recovered about 700 chipped lithic pieces, all Onondaga chert. The second site , Eeyore (AfGt-87), was discovered in 1996 by shovel testing. Initial test excavations of a few one metre squares (average of about 40 chipped lithic pieces per square metre and all Onondaga chert) revealed a small lithic reduction camp, probably used intermittently over several millenia.

This section of Highway 3 traverses an area of localized Onondaga chert outcrops. In fact, one outcrop of chert was located within the right-of-way but there was no sign of human use. The Eeyore site is scheduled for salvage excavation in 1997. It is hoped that the recovery of diagnostics and a sample of lithic debitage will shed some light on the procurement and reduction of Onondaga chert from bedrock sources.

HIGHWAY 6(NEW) (ANCASTER)

Archaeological assessment, directed by Phil Woodley, continued on the Highway 6(New) corridor. A large ploughed field, bounded on the west by Highway 6(New) and on the north by Highway 403, was surface collected, in advance of its possible use as a borrow pit during highway construction. The field covers about 15 hectares and a total of 19 sites and diagnostic projectile point findspots were documented, including Middle Archaic (Brewerton), Late Archaic (Small Point), Early Woodland (Meadowood), Middle Woodland, historic Euro-Canadian, and

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possible Palaeo-Indian. Artifact locations were mapped with the aid of a Global Positioning System (GPS), courtesy of the Geotechnical Section, MTO. The site density of 1.3 sites per hectare is almost identical to site density in the Highway 6(New) corridor (Hagerty and Murphy 1996). The concentration of Archaic sites and findspots in the kame moraine area of Ancaster is remarkable and worthy of serious archaeological research.

HIGHWAY 407/TRANSITWAY

Archaeological assessment continued further east on the Highway 407/Transitway, through the Town of Markham. The proposed right-of-way was assessed, between Highway 48 (Markham Road) and Reesor Road. Within the right-of-way, only two findspots were observed - a point fragment and a biface fragment. Beyond the right-of-way, three sites were investigated: Burkholder (AlGt-19), Burkholder II (AlGt-35), and Jackie's Archaic (AlGt-243) - a Small Point Archaic site.

The Burkholder site (AlGt-19) was registered by Victor Konrad in 1973, as part of the Metro Toronto Planning Area study. The 1996 investigations were designed to provide a precise site location relative to the Markham Bypass, using GPS technology provided by Surveys and Plans, MTO. A total of 119 artifacts were surface collected from a site area of 0.77 hectare. Every piece but one in the meagre chipped lithic assemblage is Onondaga chert. All of the bifaces and the one endscraper collected exhibit signs of bipolar battering, presumably an indicator of chert conservation. Recovered rim sherds suggest a *ca.* A.D. 1450-1500 date of occupation.

The Burkholder II site (AlGt-35) was registered by Victor Konrad and Bill Ross in 1973, as part of the North Pickering Project study. Mima Kapches did additional work on the site in 1978. Despite this earlier work, the locational data for the site were still too imprecise to properly locate it relative to the Highway 407/Transitway. Assisted by GPS technology, the site was mapped at 0.78 hectare in size and 86 artifacts were collected. Fragmentary rim sherds suggest an occupation *ca.* A.D. 1425-1475.

The relative absence of pre-Iroquoian occupation sites in the interior, 30 kilometres north of Lake Ontario, appears to be substantiated by the 1996 assessment of the eastern extension of Highway 407. The assessment of the western portion of Highway 407 by MTO staff (Warrick 1994) and Dillon Consulting staff in the early 1990s clearly demonstrated a conspicuous absence of pre-Iroquoian camp sites on the northern edge of urbanized Toronto (except for a cluster of Early Archaic sites in the Rainbow Creek Valley, west of Toronto). Two major types of pre-contact sites occur at this latitude, north of Toronto: isolated findspots (flakes and points) and Iroquoian residential (village and cabin) sites. It would appear that pre-Iroquoian groups of the Toronto region conducted only brief hunting trips into the interior, residing in base camps near the lakeshore and/or along the lower reaches of the major rivers.

HIGHWAY 407(WEST)

Portions of Highway 407(West) (formerly Highway 403- Burlington to Oakville) were assessed in the late fall of 1996, field directed by Phil Woodley. The original assessment of this proposed corridor was carried out in 1980 and 1981 by the London Museum of Archaeology. In consultation with the Ministry of Citizenship, Culture and Recreation (MCzCR), a review of this early work revealed that survey intensity (greater than five metre intervals in high potential zones and 30 metre intervals in moderate-low potential zones) and survey techniques (lack of screens in shovel testing) did not meet

standards set out in MCzCR's 1993 Technical Guidelines. Consequently, the 1996 MTO assessment was designed to reassess high and moderate potential zones and to determine what was missed by the 1980-81 work.

Reassessment of 35.2 hectares within the Highway 407(West) right-of-way revealed a total of 11 sites and diagnostic findspots; 10 of the 11 are new sites and the remaining previously-registered site (AiGw-94) was transformed from a diffuse flake scatter not worthy of further investigation to an Early Iroquoian village. It should come as no surprise that the use of 30 metre survey intervals, testpitting without screens and walking ploughed fields under questionable conditions of surface visibility, common archaeological practices in CRM work of the late 1970s and early 1980s, missed a significant number of important sites.

HIGHWAY 33 (BATH-ADOLPHUSTOWN), EASTERN REGION

In 1995, Carl Murphy was temporarily assigned to Eastern Region, to assist the Environmental Unit with a number of archaeological assessments, including Highway 33 (Bath-Adolphustown Ferry). The 1995 assessment concentrated on the eastern half of the corridor, Bath to Conway, and high potential zones in the western half. A total of five sites were located, two pre-contact and three historic (i.e. late 18th and early 19th century residential sites fronting on Highway 33). In 1996, salvage excavation, directed by Carl Murphy, was begun at one of the pre-contact sites (Upper Gap).

The pre-contact sites are Punchard and Upper Gap (BaGe-2). Punchard was not registered because it was only a findspot of undiagnostic ceramics, perhaps Middle Woodland in age. Further Stage 3 testing was scheduled for 1997. The Upper Gap site was discovered by shovel testing in 1995 and was partially salvage-excavated in 1996. Upper Gap is a regionally significant site. It contains the remains of an Early Iroquoian (Pickering) occupation (ca. A.D. 1200), a Middle Iroquoian occupation (A.D. 1320-1400), and an early-mid 19th century component. The site is only 10 metres from the bedrock shore of Lake Ontario and stretches along the lakeshore for 180 metres. The Middle Iroquoian component is in the eastern half of the site and has revealed traces of at least two longhouse segments. The Early Iroquoian component is in the western half of the site and is represented by a few features and a ploughed midden. Upper Gap is the first Early Iroquoian site recorded for the Kingston area. It is probably related to two registered Early Iroquoian sites (Taylor I (AlGi-4) and Redner I (BaGi-6) situated further west in Prince Edward County (Sweetman 1972), and it will most certainly shed light on the Early Iroquoian settlement of eastern Ontario and on developmental relationships with the Jefferson County St. Lawrence Iroquoians of New York State (Engelbrecht et al. 1990). Salvage excavation of Upper Gap will be completed in 1997.

Three late 18th or early 19th century sites are located just west of the Upper Gap site. Two are known only from limited testing: Grant and Church (McCaugherty). Both produced creamware and pearlware ceramics. The third site, Craven (BaGf-19), was partially salvage-excavated in 1996. Portions of stone foundations were uncovered and a ceramic assemblage containing primarily creamware and pearlware, dating ca. 1810-1830. The United Empire Loyalists settled the Bath-Adolphustown area, along the lakefront, in 1784. It is likely that at least one of these sites will produce evidence of a Loyalist occupation. Salvage excavations are scheduled for 1997.

ACKNOWLEDGEMENTS

I would like to take this opportunity to thank the 1996 archaeological crew - Phil Woodley, Carl Murphy, Jeff Bursey, Wayne Hagerty, Jackie Dolling, Andrew Murray and Doug Nixon. All of them put their heart and soul into their work and remained professional at all times, despite the insecurity of their employment and an uncertain future. Their collective knowledge and skills were a remarkable resource and made MTO's in-house archaeological program the success story that it was.

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1996 ARCHAEOLOGICAL EXCAVATIONS OF THE INTERIOR AND EXTERIOR OF THE 1813 BLOCKHOUSE NO. 1 AT HISTORIC FORT YORK, TORONTO

CATHERINE F. WEBB

Through the summer of 1996, the Toronto Historical Board conducted its 10th consecutive season of field work at Historic Fort York in Toronto. The focus of the investigation was the 1813 Blockhouse No. 1 which had been the sight of a prior archaeological test in 1992. Restoration of the building was to occur in the Autumn of 1996, during which time final archaeological monitoring would take place.

HISTORICAL BACKGROUND

Fort York is a British military garrison designed to protect the harbour at York. The Town of York (later the City of Toronto) was founded here in 1793 by Lieutenant Governor John Graves Simcoe.

The famous Battle of York took place here in 1813 when the American army attacked and overwhelmed the British, Canadian and Native defenders of the town. The fort was destroyed during this and a second attack later in the same year. As a result of the attacks, the Fort's defences were strengthened and a period of rebuilding occurred. Today, seven of the city's eight oldest buildings are found here; all dating between 1813 and 1815.

The fort remained an active British garrison until 1870. The Canadian government used the site as a training and storage facility until 1909 and for married soldiers' living quarters until 1932. The site was used for army training during World War I.

Because the historic value of the buildings and property has been recognized as significant, an architectural and engineering study was commissioned by the Toronto Historical Board in 1987 (Quadrangle 1987). The mandate of this study was to examine the existing condition and future needs of the fort and resulted in a multi-year, multi-component restoration project. The focus of the 1996 restoration was Blockhouse No. 1.

Blockhouse No. 1 was the first buildings constructed on the west side of Garrison Creek following the destruction of the fort in 1813. This 40 foot square building was built to be relatively self contained with a basement powder magazine and areas for stores. The upper storeys were used as a barracks. The two storey superstructure was constructed of whitepine logs with the second storey jutting out over the first for defensive purposes. The exterior of the building was clapboarded. There

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were no windows, only splayed portholes and loopholes on each facade and there was no ground floor entrance. Access to the building was through a second storey door on the east facade reached by a steep ladder (which could be retracted during battle). Over time, the building was used not only for storage and barracks, but was also used for immigrant housing in 1822 which led to an outbreak of smallpox at the garrison. In 1832, Blockhouse No. 1 was used as a temporary hospital during a cholera epidemic. During that year, the floor of the first storey was lowered to create more head room (making the basement area virtually unusable), chimneys were repaired, and a door was cut out in the lower storey. In 1838, necessary landscaping work was done around the building to repair the defensive wall along the south side of the building. This bank had collapsed due to water erosion from Lake Ontario and the south wall foundation was in danger of being undermined. Following the 1850s, landfill was being deposited south of the fort, so water erosion was no longer a problem. Repairs to the building were completed periodically, but no major alteration was done to the building until the 1930s when the exterior clapboarding was removed, the basement area filled in with sand, and a concrete floor laid to replace the wooden one. In the 1950s/60s a new wooden floor was laid over the 1930s concrete floor and the original firing step was dismantled and replaced with an inappropriate brick one.

EXCAVATION OF BLOCKHOUSE NO. 1

Archaeological research to date has shown that the buried remains at the fort are extensive, deep, and well preserved. A large artifact assemblage (both military and domestic) representing all historic periods from 1793 to the present have been documented. A comprehensive description and interpretation of the fort's extensive historic drainage systems, roads, structural remains and other archaeological features, soil stratigraphy, fortifications, and historic landscape is being added to following each year of excavation.

As part of the 1996 restoration of Blockhouse No. 1, the foundations are to be stabilized and a perimeter drain installed. As these operations involve disturbing the archaeological resource surrounding the building, archaeological investigation was deemed necessary to determine the extent and location of any archaeological features along the perimeter. In 1992, initial perimeter testing (1FY35) around Blockhouse No. 1 uncovered evidence of a large, deep, mortared stone retaining wall extending perpendicularly from the north foundation at the north-east corner of the building. Due to time constraints, a more thorough investigation of this feature had to wait until 1996 when further units were opened up. When it became clear that this feature was a retaining wall for a basement entrance, an excavation was conducted in the interior of the blockhouse (1FY38) in the north-east corner.

Four excavation units were opened up encompassing the north-east corner of the building. These units measured 2 x 2 metres, 2 x 1 metres, .95 x 1.75 metres, and .25 x 1.75 metres. Excavation focused on the north-east

Figure 1. 1813 Blockhouse No.1 at Historic Fort York, Toronto.

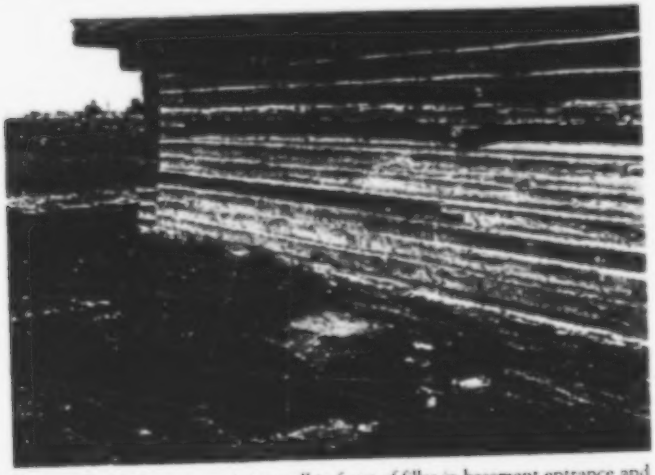

Figure 2. 1813 stone retaining wall in front of filles in basement entrance and 1920s concrete block at the north-east corner of Blockhouse No.1.

area of the blockhouse due to extensive 20th century disturbance along the south half of the building and the north-west corner. Excavation along the perimeter of the blockhouse revealed evidence of 20th century landscaping and utility installation which had minimally disturbed the archaeological remains. An early 20th century deposit consisting of coal and cinder had been piled up against the foundation. This deposit may have originated from the cleaning out of interior stoves. Slightly earlier late 19th century landfilling was also uncovered. The large number of artifacts in this layer suggests that the deposit originated in a midden area, possibly from the east rampart which was removed during the construction of the Park Blackwell factory *ca.* 1898 (located to the east of the blockhouse). The deposition of this clay fill around the building resulted in substantially less of the building foundation being visible. The landfill layer overlay a thin mid to late 19th century buried "A" horizon. Earlier alterations to the ground surface around the blockhouse consist of the deposition of a gravel layer in the 1850s/1860s. This undoubtedly was laid to assist in drainage and make the ground surface less muddy. Limited evidence (joist impressions) for a pre 1850s boardwalk along the east side of the structure was uncovered. An 1830s artifact rich clay fill deposit was found along the perimeter of the building. It is probable that this clay fill deposit is from a nearby late 18th through to early 19th century midden which was redeposited around the blockhouse during the 1837-38 period of repairs at Fort York as a result of the Mackenzie Rebellion. Significant repairs were made to the embankment in front of Blockhouse No.1 in 1838 which may have also resulted in a great deal of earth movement. Excavation in the area of the large mortared retaining wall at the north-east corner of the blockhouse first uncovered in 1992(Webb 1994) revealed that it was located in front of a filled in basement entrance and was in the configuration of a deep rectangular cellar door well. The exterior dimensions of the feature are 1.5 metres north-south by 2.95 metres east-west. Although the upper portion of the retaining wall had been partially dismantled historically, it survived to a depth of 1.24

metres. As a result of the upper surface of the feature being dismantled it was not possible to determine if there were attachments for storm doors over the retaining wall. The retaining walls varied in width from 35 centimetres to 65 centimetres. There was no evidence for stairs although a wooden ramp may have been used to roll barrels and equipment into the basement area. The floor area consisted of a layer of mortar with flat stones. As the first floor of the blockhouse was lowered in 1832, the basement area would have been made unusable and the entrance would be no longer needed. At that time, the door was filled in with stone and the interior of the retaining wall was filled in with brick and stone rubble. Further architectural features consist of an area of brick infill located centrally along the north foundation wall of the blockhouse. This brick infill is related to a splayed air vent in the foundation. Similar air vents were discovered during archaeological monitoring around Blockhouse No. 2 in 1995 (Spittal 1996). These air vents are original to the building and would have allowed airflow into the damp basement area. Finally, a continuous layer of organic clay with charcoal deposits uncovered around the perimeter of the building represents the 1793 to 1813 buried "A" horizon prior to the construction of the blockhouse. The charcoal deposit may be related to the 1813 American destruction of the wooden garrison buildings located at the eastern end of the fort, or to the original clearing of the land.

Prior to excavation in the north-east interior corner of the building, the 1950s/60s wood floor was removed, the 1930s concrete floor cut out, and the underlying sand bedding removed. Four excavation units were opened, three of which measured 1.4 by 1 metre and one of which measured 1.4 by .75 metre. Shoring was necessary because of the depth of the excavation. The edges of the splayed door jams were immediately visible following the removal of the sand fill. The interior width of the door was 1.95 metres compared to the exterior width of 1.75 metres. Although no structural evidence was uncovered that might suggest a specific use of the area (such as a vaulted roof for a temporary magazine), a number of floor deposits were uncovered. A loose rubble layer was uncovered directly below the sand fill. This deposit contained a great deal of architectural refuse relating to the 1930s restoration. In addition to this, a wide variety of temporally varying artifacts such as a pewter 66th Regiment button from the 1830s, an 1861 farthing, creamware and pearlware fragments, and a tennis ball suggest that artifacts were deposited over a long time throughout the 19th and early 20th centuries (possibly falling down between cracks in the floor boards). An underlying clay fill deposit contained artifacts predominantly from the 1830s and earlier. One possible reason for the deposition of clay in the basement may have been to alleviate dampness problems by raising the surface level. The clay would likely have been deposited immediately prior to the filling in of the basement entrance and the lowering of the first floor. This is supported by the presence of nine fragments of a distinct polychrome sponge decorated pearlware vessel recovered from the infill deposit of clay and mortar rubble in the interior of the retaining wall which match five fragments recovered from the clay fill in the interior of the basement. A stone and mortar floor surface was uncovered under the clay fill. The artifacts in this layer suggest that it dates from the 1820s to 1830s. Two north-south joist trenches were uncovered under the stone and mortar surface. These joists would have been supports for an original 1813 wooden floor. One of the joist trenches was reused as a surface drain filled with brick and stone debris, to allow water to flow from the area in front of the filled in door to a deeper (as yet undetermined) area to the south - possibly a catchbasin.

A total of 6,851 artifacts were recovered from 1FY35 (1996). A total of 1,771 artifacts were recovered from 1FY38 in the interior. These artifacts have a temporal range of late 18th century to 20th century and consists of domestic artifacts such as ceramic vessels, glassware, cutlery, container fragments, and faunal elements, architectural artifacts such as wrought, machine cut, and wire nails and spikes, window glass, and hinges, clothing artifacts such as bone, mother of pearl, and glass buttons and pins, and military artifacts such as regimental buttons, uniform accoutrement, musket hardware, and ammunition.

Following excavation, a recommendation was made to preserve the retaining wall at the north-east corner of the blockhouse. Consultation between the architects, curatorial and property maintenance staff and the archaeologists has resulted in the stabilization of the feature and landscaping was done to expose the feature for interpretive purposes. The interior excavation will be left exposed as a part of a future archaeological exhibit.

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FIELD SCHOOLS

CATARAQUI ARCHAEOLOGICAL RESEARCH FOUNDATION 1996 FIELD SCHOOL

SUSAN M. BAZELY

The Cataraqui Archaeological Research Foundation is a heritage resource management group, which promotes archaeological research and resource management through public education and awareness. The Foundation operates the Kingston Archaeological Centre, which includes an interpretive exhibit on the history of human occupation in the Kingston region from prehistoric times to the 19th century, an extensive research collection, archives and library. To fulfill part of its education mandate, the Foundation initiated a summer archaeology camp in 1996 titled "Can You Dig It?".

BACKGROUND

The Kingston area is fortunate to be riddled with museums, historic sites and archaeological resources. Many of the museums are located in historic structures representing a variety of periods and types of occupation. Discussions at meetings of the Kingston Association of Museums, Galleries and Historic Sites (KAM) prompted a pilot project between the Cataraqui Archaeological Research Foundation(CARF) and the Correctional Service of Canada (CSC) Museum.

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The site of the CSC Museum was chosen for a number of reasons including it's research potential. The possibility of investigating the site to gather information on occupation prior to the construction of the Warden's Residence in 1871, was of interest since little is known of the early development of the Kingston Penitentiary. In addition, archival research has indicated that the militia were stationed at this location during the Upper Canada Rebellion in the 1830's.

The camp was conducted for 4 week long sessions between July 22 and August 23 1996 with a total registration of 15 participants. The small groups of participants between the ages of 9 and 15 provided workable numbers for this pilot project in public and educational

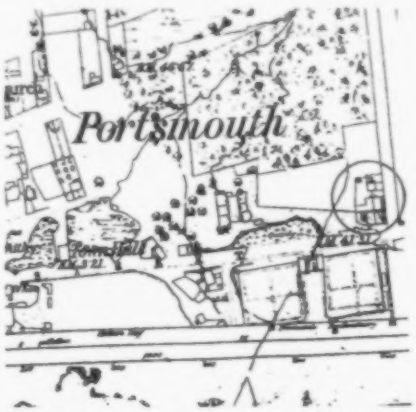

Figure 1. Kingston Penitentiary grounds prior to construction of Warden's Residence. 1869 Fortification Survey NMC 20433

Figure 2. Students participating in the field school

archaeology. The first 2 days of workshop sessions on Research & the Archives, Archaeology & Excavation, What Happens After the Dig?, and How do we Show What was Found? were conducted at the Kingston Archaeological Centre, 370 King Street West. Excavations were conducted on the front lawn of the CSC Museum, corner of King Street West and Sir John A. Macdonald Boulevard in Kingston, Ontario.

A total of five excavation units were laid out in locations thought to have the greatest archaeological potential. However, due to the limited field time, no units were excavated to culturally sterile soil. No structural elements relating to the militia occupation were identified although the artifact count was high. A variety of landscape elements including driveway surfaces and lighting devices were identified. These relate to the Warden's Residence period. It was found that a large amount of fill had been placed on the site after completion of construction of the Warden's Residence. Stratigraphic and material culture analysis is ongoing.

The excavation report has been an attempt to gather together all current knowledge on the development and occupation of the site area in the greater context of the ongoing development of the Kingston Penitentiary(Bazely 1997). The archaeological work of this project is a small component of an ongoing effort to pursue and understand the history of the Kingston Penitentiary. Excavations will be continued during the 1997 summer camp.

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TRENT UNIVERSITY FIELD SCHOOL AT THE KROERBER SITE(BBGL-6), ASPHODEL TOWNSHIP

SUSAN M. JAMIESON

In May and June of 1996, research was undertaken at the northeastern boundary of the Village of Hastings in conjunction with Trent University's field school in Ontario archaeology. Research goals were to: 1) determine if an uncorroborated report of prehistoric cultural remains could be verified, and 2) salvage cultural remains, if any, prior to property development. These goals were set within the framework of a program designed to cultivate a sense of mutual respect for the divergent pasts presented by natives and archaeologists while encouraging critical and constructive analyses of these pasts. The intent was to provide future band managers with a basic framework which would enable them to evaluate the quality of archaeological fieldwork and reports presented as one component in land claims disputes and to train archaeology students as anthropologists who can relate to the sensitivities and concerns of native peoples. The ultimate objective was to develop an interdisciplinary and intercultural discourse that made the past accessible physically, intellectually, and socially to all while introducing students to the basic skills required to survey, excavate, analyze, and interpret a site. Aims were achieved through readings, intensive hands-on teaching by an elder, discussion of relevant topics issues, an archaeologist and a cultural advisor, and submission of notes and summary reports for correction and comment, and examinations on course components. In 1995 a Hastings resident reported that numetous ground stone tools had been removed from Blocks 1 and 2 of lot 5, Concession VIII, Asphodel Township, Peterborough County. However, surface survey by fieldschool participants failed to locate anything but recent debris such as soft drink cans, bottle fragments, and cigarette butts. Subsequent systematic shovel probes revealed charcoal particles immediately below the sod, indicating that there had been a wide-spread burn in the past. Additional evidence for this included burnt root sections, fire-reddened soil, and low hummocks raised on the western side of shallow depressions. When shovel tested, the latter confirmed that tree falls and stumping activity had preceded the burning. Historical documentation elaborates upon this approach to land clearing in the last century: "undergrowth was cleared, the trees felled and rolled into heaps, and demolished by fire" (Graham 1978:48,195). In Block 2 of lot 5, shovel probes further produced a few late nineteenth and early twentieth century artifacts and a midden-like feature: it was in this vicinity that the field school laid out its excavation grid. A total ninety-two square meters were dug to sterile subsoil, which ranged between 16 and 44 centimeters below surface. The sole feature encountered at the site (apart from root

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burns), became clearly defined at a depth of 15 centimeters below surface. Feature 1 was a pit of irregular outline, without evidence for shovel or other tool marks, that had infilled with loosely compact and noticeably odiferous, rich black midden soil. It measured 94 centimeters at it widest and 180 centimeters at its longest points and extended to a depth of 44 centimeters below surface. The pit contained faunal material and wire underlain and overlain by semicharred roots, all concentrated between 25 and 31 centimeters below surface. Feature 1 was most likely formed when a depression caused by a fallen, uprooted tree or by stumping was infilled with butchering waste.

Subsequent to disposal of butchering waste from at least one each of domestic pig, sheep, and cow in the pit and nearby, there was a burn of the area. This is evidenced by the charring and calcining of bones from all three mammals, but most noticeably those *in situ* in Feature 1 where burnt root sections both overlie and underlie remains. Machine-made wire found in direct association with pig feet and below the plough zone dates this butchering event (and, presumably the other butchering events) to post A.D. 1880, the burn even later than this. Other artifacts found at the site point to the presence of a nearby residence and agricultural use during the late nineteenth and early twentieth centuries. These inluded a whiteware sherd with a colourless glaze, a machine-made ferrous band fragment, a cut nail shaft, a wire nail, .22 calibre rim fire casings, and pieces of machined wire. Subsequent to the burn, the field was put into cultivation. This has destroyed virtually any cultural stratigraphy that may have existed, and has removed and dispersed the upper part of Feature 1. The steepness of slope, the stoniness and relatively high clay content of the soil, and the thin solum render this lot agriculturally marginal. It seems most likely, therefore, that the land was cleared after it was disposed of by the estate of Richard Birdsall (ca. 1860), as it would not have been economically worthwhile to put it into production prior to this date (Maryatt Papers B-69-001/10/4). We know that lumbering was a major economic activity in Asphodel between 1858 and 1880, when Hastings sawmills exported their products as far afield as New York State (Graham 1978:17,29,48,98-101). A painting of the Trent River at Hastings completed at some point between 1857 and 1876 shows that the area in the vicinity of the Koerber site was still well forested after mid-century (Graham 1978:92,100). Valuable timber could have been harvested from Blocks 1 and 2, with the remaining brush and logging debris eventually being burnt off so that the land could go into agricultural production once population had increased enough in the area to render this economically worthwhile.

But where are the 'arrowheads'? The Hastings informant showed us a natural spade-shaped piece of limestone from Block 2 of lot 5 that had well-developed wear polish along its curved margin and edge. Because this specimen lacks stylistic attributes that would permit approximate dating, one can only note here that large, informal tools exhibiting use-wear are not uncommon in this region and seem to most often be associated with Late Archaic or Early Woodland assemblages. We also were told that when Highway 45 (300 meters south of where we had tested) was widened ca. 1950, a large hearth and faunal remains were exposed and destroyed. If this information is correct, then there is no doubt that there is (or was) a site in the vicinity. If one were to search in undisturbed portions of the yards of the houses erected in the recent past between the area we tested and the highway (and originally farmed contiguous with Lot 5), then one might

encounter the elusive site, providing that it has not been ploughed away over the years. However, no one has reported finding artifacts in their garden. All pedagogical objectives were met by the field school, but these certainly would have been enhanced had the site been even moderately richer in cultural remains. Nonetheless, apart from the obvious hazards of digging where there is a lush growth of poison ivy, the cold and wet field season, and the disappointingly few artifacts, the experience generally was received as a positive one. Participants have been able to extend and apply knowledge gained thereby during the 1996-1997 academic year.

ACKNOWLEDGEMENTS

I would like to thank all of the field school participants for their hard work and tenacity. Special appreciation is extended to Art Beaver, Shirley Williams, Glenn Kearsley, Reinhold Koerber, Brenda Lackey, Elmer Richardson, and Our Lady of Mount Carmel Cemetery Board. The research component was funded through the Office of the Dean of Arts and Science, Trent University, and the educational component of the field school was enhanced through a Trent University Academic Innovation Fund award to the author.

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THE GUILD LOG CABIN --AkGt-51

MARTHA A. LATTA

The bronze plaque in front of the Log Cabin reads:

> "The Osterhout Log Cabin. The oldest building in Scarborough. Built in 1795 by Augustus Jones who was commissioned by John Graves Simcoe — First Lieutenant Governor of Upper Canada — to survey Scarborough. William Osterhout later received the First Crown Grant of the land from King George III in 1805."

Scarborough's Bicentennial Celebration in 1996 provided an occasion to address the question of the Cabin's origins. Curators Grace Reynolds and Alexandra Avdichuk organized historical and architectural assessments of the Cabin and approached the author for an archaeological assessment to complement these studies. The 1996 program involved a university field school and a public archaeology opportunity directed by Peter Hamalainen and co-sponsored by the Toronto Chapter of the Ontario Archaeology Society.

The cabin sits in Guild Park, on Lot 14, Concession C, Scarborough Township, York County, Ontario. The Guild Inn, at the front of the property, is a mansion-hotel surrounded by gardens littered with fragments scavenged from Toronto banks by the most recent private owner, Spencer Clark. Now a park operated by Toronto Parks and Culture, the Guild is a favorite location for wedding photographs.

The Log Cabin is situated in a back corner of this property, looking over the Scarborough Bluffs to Lake Ontario. It is a 1½ story structure consisting of one ground floor room heated by a very large fieldstone fireplace and an unfinished attic, accessed from below through a trap door. It is not a particularly fine example of log architecture:

"In very simple terms, the lap jointing and the round log construction are pretty crude technology and suggest that the owner wasn't of a particularly educated or moneyed class, nor related to fields like the military or land surveyors" (Michael McClelland, Edwin Rowse Architect Inc, 1995).

A crude log cabin would initially have had an earth floor. Beneath the present wooden floor, we found a rock-strewn, uncompacted surface which had clearly never been an occupation floor. This argues that the Cabin has been moved to this location.

The Cabin exhibits a number of architectural peculiarities. Its walls are constructed of a mixture of squared adze-marked logs and of round logs which retain their bark. The wide spaces between the logs suggest that the building was made from green timber; it would have been difficult to heat the building before the modern chinking was added. The sill logs are placed upside-down and their notches are filled with

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concrete; the floor joists are attached with nails. A telephone pole, dated 1936, is incorporated into the lower part of the east wall. Evidently, the Cabin has been taken apart down to the bottom to replace weakened members.

The Cabin has been modernized in the present century by adding a shallow concrete foundation, Portland cement chinking packed around chicken wire, a wooden floor, electricity, running water, a septic tank and a new roof. Although parts of it may be old, the Cabin is not a pristine structure.

The property is situated on a fossil beach terrace separated by a steep bank from the upland where Military Trail and Kingston Road lead east from Toronto. The Cabin itself is ated about 50 meters north of the Scarborough Bluffs which are high (more than 60 meters in some places), steep and rapidly eroding. There is no access to Lake Ontario at this point. The soils are a till deposit of heavy clay mixed with large to very large rocks. They are poorly drained and form swampy areas after every rain. Since there cannot have been much competition for space in the late 18th century, why a cabin should have been situated in such an inconvenient spot is problematic.

The Cabin's history is colorful due, in large part, to the fact that during the 1930s and 1940s it was occupied by Lucy Swanton Doyle (1880-1973), a pioneering female reporter with the Toronto Telegram and an unblushing purveyor of a good story. Her articles and her privately-circulated history of the Guild Inn Property elevated the Cabin to a Depression-era historical landmark. The fact that her sources are rarely indicated and cannot be verified has not discouraged local traditions of its great antiquity.

Putative builders include: John Graves Simcoe. Doyle quoted (without reference) Simcoe's comments about the cabin but, sadly, there is no evidence to support this claim. Governor and Lady Simcoe visited the bluffs in 1793, and Simcoe's diary notes on November 20, 1794: "Sailed from York with a fair but high wind and encamped below Scarboro' Heights" (Cruikshank 1927:30), but neither visit seems to have involved actually climbing up to the terrace.

Augustus Jones, the Surveyor Royal for Governor Simcoe, was Lucy Doyle's preferred choice. Although Jones' survey teams passed through the area in 1793, their own records refer to the use of tents which could be moved quickly. They did not linger in this region more than a few days and it is not clear that Jones himself was here at all.

William Osterhout was a Loyalist who received the property from the Crown on July 8, 1799. Assessment records show that Osterhout lived prosperously in Niagara, where his descendants operated an apothecary's shop still called by the family name. He sold his Scarborough land on May 10, 1805. There is no evidence that he ever visited it, much less built a cabin there. The dates on the bronze plaque are clearly wrong.

Census rolls, voters' lists and tax rolls indicate other early landowners. Though all of these individuals are specifically indicated to have lived elsewhere, they might have built the Cabin as a hunting lodge. Other romantic explanations for the Cabin's location include a smuggler's hideout (to which goods had to be hauled up a 60 meter high cliff) or a military lookout post.

Lot 14 was cleared for farming by James Humphrey who purchased the land on 18 October 1845. Humphrey and his heirs held the property until the current century. Census and assessment records show that the Humphrey's residences and farms were on other property; Lot 14 was generally leased out. Martin Crozier leased the entire lot in 1856. Andrew Johnston rented 0.10 acre of

Lot 14 from 1875 to 1880, and George Sprunt paid taxes for the same area from 1881 to 1895. All of these individuals had families with small children. There is no indication which part of Lot 14 they leased but its size (just over 400 square meters) suggests a residence rather than a farm.

In the 20th century, the property was acquired by Rosa and Spencer Clark who created and supported "The Guild of All Arts" for which the property is now named. A 1912 map gives the first specific reference to a log cabin on Lot 14, and the present cabin was modernized and pressed into service as a home for Lucy Doyle whom Spencer Clark greatly admired.

To summarize, the principal contenders for the honour of building the Guild Log Cabin are Augustus Jones, William Osterhout, and the Humphrey family or their tenants.

ARCHAEOLOGY

We excavated about 100 square meters around the exterior of the Cabin. The excavation results failed to support the information on the plaque. Of the more than 8,500 artifacts recovered, most were clearly of 20th century origin and none could be confidently dated to the 18th or even the early 19th century.

Finds which date from the latter part of the 19th century included:

a) an 1854 Bank of Upper Canada half penny. Although they were officially replaced by national coinage after Confederation, bank tokens continued in circulation for many years after their issue.

b) many fragments of whiteware dishes with blue, brown, green and flowed blue transfer decoration. All of these colours were available after about 1830 and became common after 1850.

c) a transferware plate bearing the series name "Highland Scenes". Transfer plates with idealized "memories of home" were made by a number of British potteries and marketed in the colonies.

d) a Hohner "Marine Parade" harmonica. Hohner was one of the leading manufacturers of harmonicas in the late 19th century. Their products were sold through mail order houses such as Sears and Eaton's.

e) a small china doll with unjointed limbs. Unfortunately the limbs and head, the most useful parts for dating, are broken off but it is of late 19th or 20th century type.

f) fragments of a lead soldier and horse.

Archaeology produced abundant evidence of an occupation during the Humphrey period. The presence of dishes and household objects suggests a residence rather than a barn or shed. One or more boys and girls were present, unlikely members of a frontier survey crew.

FACTS:

1. The Log Cabin is a pastiche. Parts of it may be very old; parts of it are certainly recent. In its present form, its claim to be "the oldest building in Scarborough" is untenable.
2. While an earlier cabin may have been built on Lot 14, this particular structure has been moved to its present location.
3. Artifacts indicate a mid- to late-19th century household which included young children.
4. Tenants of the Humphrey family lived on a small part of Lot 14 during the period 1875-1895. These tenants had large, young families.

CONCLUSIONS:

The most parsimonious interpretation of these facts is that a log cabin located on Lot 14 was rented to tenant families whose refuse forms the archaeological record. Portions of this original cabin were later incorporated into the present structure which was reconstructed at a more convenient spot. There is no evidence for a connection between the present Log Cabin and any of the early property owners. The information on the bronze plaque, like Lucy Doyle's stories, is romantic but false.

ACKNOWLEDGEMENTS:

We are grateful to the many people from the OAS, from the media and the public who supported this endeavour. Thanks, particularly, to Toronto Parks and Recreation and to the University of Toronto at Scarborough.

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THE 1996 ERINDALE COLLEGE FIELD SCHOOL AT COOTES PARADISE, HAMILTON, ONTARIO

DAVID G. SMITH AND TREVOR L. ORMEROD

Archaeological excavation and survey at Cootes Paradise during 1996 yielded important new information and insights concerning prehistoric native occupations of this unique wetland area. This work was a continuation of research begun by the author in 1995 (Smith 1996). As was the case in 1995, the archaeology was conducted through a field course from Erindale College, University of Toronto; the aims and objectives of this field course are summarized in the 1995 report. Investigation was continued in the environs of Bull's Point, which will be referred to in the rest of this report as the Bull's Point Geographical Feature (BPGF).

The research focus in the 1996 season was the Princess Point Complex (A.D. 500-1000) and the origins of agriculture in southern Ontario (Smith and Crawford 1997). Continuing from 1995, the Bull's Point site (AhGx-9) was subjected to partial excavation. Among the significant finds at Bull's Point were post moulds and features which may be evidence for a small structure at this site (Figure 1), among the first identified for Princess Point. Archaeological survey discovered one additional Princess Point site, named Bull's Cove (AhGx-365); this site was subjected to limited test excavation. Both Bull's Point and Bull's Cove are small sites situated in the bottoms of ravines at the present water's edge (see Figure 1). They are interpreted as warm-weather, single family camp sites occupied on a short-term basis for the exploitation of seasonal resources such as wild rice and/or waterfowl. Additional survey along the north shore of Cootes Paradise found four other archaeological sites, none of which, however, could be identified as Princess Point.

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SURVEY

Test pit survey in 1996 was conducted on the north shore of Cootes Paradise around and in the general vicinity of the BPGF (see Smith, Ormerod and Bekerman 1997, Figure 3). Because the Bull's Point site is situated at the water's edge at the base of a glacial ravine (Figure 1), other glacial ravines that cut into the BPGF were tested. In one of these, further along the shore to the northwest of the Bull's Point site, a very small amount of Late Woodland pottery was found in 1995, documenting that sites are situated in other glacial ravines in Cootes Paradise. This site, named Bull's Cove (AhGx-365), was test excavated in 1996. Further testing recovered a small number of chert flakes in two ravines on the east side of the BPGF, but no ceramics or other diagnostic material. A ravine on the northwest side of the BPGF yielded no artifacts. In 1996, the survey parameters were expanded to include the shoreline further to the west of the BPGF. Two areas were test

Figure 1. Photograph of the Bull's Point site facing grid west.

pitted, including a level area just above the current water level just to the west of the cattail marsh and a narrow terrace a few dozen metres further west along the shore. Both of these areas yielded a few chert flakes; in addition, an extremely small concentration of Early to Middle Iroquoian pottery was discovered in the centre of the narrow terrace at about two metres above the water level and about ten metres from the shore. None of these sites could be identified as Princess Point. The distinctive location of the Bull's Cove and the Bull's Point sites is noteworthy. Both sites are located adjacent at the water's edge in glacial ravines. The ravines are approximately fifteen metres across at the bottom, but narrow somewhat further inland. The gradient of slope of the tow ravines is approximately one-in-ten, although the bases of both ravines are relatively level. Bull's Point is situated in the larger of the two ravines and has cultural material deposited up to about thirty metres from the base. The artifact density at Bull's Cove is much less. A few artifacts were recovered in test squares about thirty metres up the ravine, but the majority were located in test units near the water's edge.

EXCAVATION

Full-scale excavations were conducted at the Bull's Point site; Bull's Cove was subjected to test excavations only. The soil profile at both sites is remarkably consistent throughout the excavated areas. The B horizon is a dark humic layer approximately twenty centimetres thick. This overlays a leached-out layer about five centimetres in thickness. The subsoil is light brown and silty. There is no evidence for erosion at either of the two sites.

At Bull's Point, seventeen square metres were excavated over the course of two weeks by Erindale College field school students in 1996. Each square was excavated in arbitrary 5 centimetre levels, and a 10 litre flotation sample was taken from each level. Except for the flotation samples, all soils were sifted through 1/8 inch mesh. Artifacts were found throughout the B horizon. A rather limited artifact sample was recovered from both the screening and the flotation processes. The pottery is typical of a Princess Point

assemblage (see Smith, Ormerod and Bekerman 1997, Figure 8). It includes sections from about 10 pots, although the pieces are mostly fragmentary. The chipped lithic assemblage includes cores and flakes as well as a small number of finished tools, including bifaces, scrapers and a perforator/drill (see Smith, Ormerod and Bekerman 1997, Figure 9). Almost no faunal material was recovered. On-going analysis of flotation samples has recovered a number of corn kernel fragments. An AMS radiocarbon assay on one of these returned a date of 960±60 BP (TO-6341) (Smith 1997).

Recovery of settlement data produced an interesting pattern (see Figure 2). Both post moulds and features were revealed once the total overburden had been removed and the subsoil surface was shovel-shined. The post moulds in the excavated area outline a small structure, roughly rectangular in shape with rounded corners. It measures roughly 4 x 3.25 metres in size, and is oriented with the slightly longer axis on a southwest to northeast axis to magnetic north.

The excavations at the Bull's Cove site were more limited in nature that those at Bull's Point. Only twelve square metres were excavated at this site during the 1996 season. Bull's Cove appears to be much smaller than Bull's Point. The majority of artifacts came from squares closest to the water in the western section of the excavations. The artifacts include a small number of pottery sherds and chert flakes, but no diagnostic artifacts.

DISCUSSION

One of the more interesting results of the 1995-6 research was the unexpected occurrence of Princess Point sites at the base of

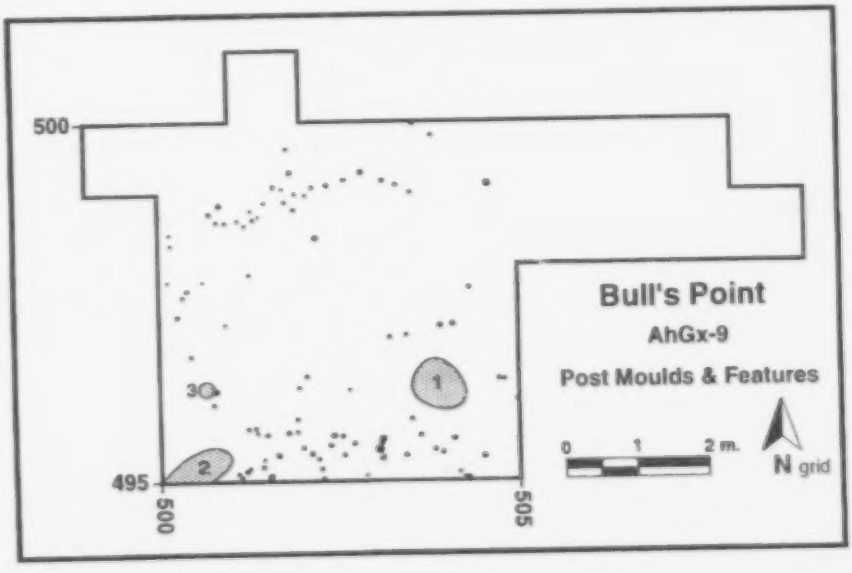

Figure 2. Bull's Point site settlement pattern

glacial ravines. This type of location for a native archaeological site in southern Ontario seems to be unique to Cootes Paradise. It appears that ease of access to the ravine from the wetland, as opposed to from inland, was a major factor in choice as a site. Both Bull's Point and Bull's Cove may have been seasonal sites for people based at larger sites such as those located at Princess and Sassafras Points.

The post mould pattern uncovered at Bull's Point is reminiscent of many houses on Clemson Island culture sites in the Susquehanna River Valley in southern Pennsylvania. In particular, a structure at the West Water Street Site on the West Branch of the Susquehanna River is remarkably similar in shape and layout (Custer et al. 1996:15), although it is somewhat larger (7.3 metres as opposed to 4 metres long). Because the Bull's Point structure is situated on what is clearly not a long-term habitation site, it may not be 'typical' of other Princess Point housing. The small number of features indicate a short-term occupation of the site; the lack of hearths indicate that it was most likely occupied during warm weather.

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McMASTER UNIVERSITY FIELD SCHOOL AT DUNDURN CASTLE, HAMILTON: FUR TRADE ARCHAEOLOGY AT THE HEAD-OF-THE-LAKE

JOHN TRIGGS

Archaeological excavations on the grounds of Dundurn Castle in Hamilton, Ontario have been carried out with the McMaster University Archaeological Field School since 1992. Work in 1996 focused on a fur trade complex operated by the first settler at the Head-of-the-Lake, Richard Beasley. Evidence of fur trade activities during the late 18th century was revealed as remains of two structures and an assemblage of fur trade artifacts were recovered by students working on the site over a six week period. The finds provide the opportunity to examine this important period in Ontario's history as the decline of the fur trade in southern Ontario resulted in a disruption to both native and European populations.

BACKGROUND TO THE EXCAVATION

Archaeological excavations at Dundurn Castle by the McMaster University Field School under the direction of John Triggs have been ongoing since 1992 when a partnership between both institutions was first initiated. To date, several projects have focused on the military occupation of Burlington Heights during the War of 1812 (see Triggs 1994, 1995, 1996a, 1996b) and most recently, beginning in 1995, on the late 18th century fur trade establishment operated by Richard Beasley. Exploratory excavation in 1995 resulted in the recovery of a sizeable assemblage of fur trade artifacts within the context of what was thought to have been Richard Beasley's fur trade store (Figure 1). Artifacts such as hundreds of glass trade beads, lead bale seals, trade silver (brooches and tinkling cones), lead musket shot and buckshot, musket and pistol flints, provided significant evidence of the location and condition of the remains of what was perhaps the oldest European building in Hamilton and the Head-of-the-Lake, as the western end of Lake Ontario was known. Based on the 1995 excavation, a decision was made to greatly expand the area during the 1996 field season and concentrate on defining the extent and location of the proposed structure.

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HISTORICAL BACKGROUND

In 1777, at the age of 18, Richard Beasley settled at the Head-of-the Lake where he established himself as a merchant and also as an active participant in the fur trade. Although there is little in the way of documentary evidence relating to his first few years in operation, a significant body of correspondence dating from 1786 to the late 1820s provides important details relating to his various business ventures. As elected Magistrate of Barton Quarter, Beasley's

Figure 1. McMaster University students excavating at Dundurn Castle have uncovered evidence of a late 18th century fur trade store operated by the first settler at the Head-of-the-Lake, Richard Beasley.

correspondence also provides information on aspects of the politics and economy of Barton Township. Various references to land disputes, road development and requests for items such as millstones provide evidence of Beasley's varied interests.

Beasley was well connected to the small number of merchants who controlled the economy of the fledgling province in the late 18th century. Richard Cartwright of Cataraqui (Kingston), arguably the single most important merchant in the province, was Richard Beasley's cousin and his main supplier. With Cartwright acting on Beasley's behalf, goods brought to Cataraqui from Montreal were forwarded to Beasley at the Head-of-the-Lake. These included a surprising array of commodities such as rum, shrouds, blankets, powder, shot, textiles (molton, ratteen, and scarlet cloth), silver works, foodstuffs (corn, flour, peas), a bellows, salt, glassware, nails, earthenware, tea and tumblers, spirits, stoves and candles. Undoubtedly, some of these goods were destined for the newly arrived settlers in Barton Township, but many of these items were also important commodities for the fur trade.

Furs were Beasley's primary export in his early years of operation. Muskrat, deer, wildcat, wolf, fox, marten, moose and beaver were among the furs being traded. However, as early as 1794 Beasley is admonished by Cartwright that he is having difficulty selling the furs forwarded by Beasley because of a depressed market for this commodity.

> I certainly agree with you in opinion that if a good price can be had for your Furs on the Spot, it is better to accept it than trust to the London Market, where the Prospect of Sales ..... is very dull indeed.
> *Letter from Richard Cartwright to Richard Beasley, dated April 17, 1794.*

The decline in the quality and quantity of goods being shipped to Cartwright continues until the end of the century when furs all but disappear from the shipping inventories. In the larger perspective, by the end of the 18th century the fur trade in southern Ontario was coming to a close: nearly two centuries of trapping coupled with land clearing occasioned by newly arrived settlers had resulted in a drastic reduction in the number of fur bearing animals. Not only did this signal the end of what was previously a significant portion of Beasley's commerce, but more significantly it signalled the end of a way of life

for the native groups involved, specifically the Mississauga Indians.

RESEARCH OBJECTIVES:

Archaeological investigation of the Beasley fur trading complex seeks to better understand the nature of the relationship between the participants in the fur trade: namely, the Mississauga natives and Richard Beasley. It is hoped that information derived from the excavation of this specific site can be used to evaluate the effects of a declining fur trade on both native and European populations. From an examination of the available documentary evidence it appears that Richard Beasley adopted a diversified economic strategy. After the decline of the fur trade, this strategy is characterised by land acquisition and importation of an eclectic assortment of goods, many of which could be described as exotic (sugar and indigo from Jamaica, 'elephant's teeth' from Africa). As a coping strategy then, Beasley appears to have broadened and diversified his operations in response to a loss of what was formerly a significant part of his business. The success of this strategy was equivocal and bears further analysis although the documentary record suggests that Beasley's accumulated debt increased substantially during the early 19th century. On the other hand, the immediate response to the change in the fur trade economy by native groups is not well understood. In many instances, though, it can be said to have resulted in a culture of poverty and marginalization by the early decades of the 19th century.

ARCHAEOLOGICAL METHODOLOGY:

One of the logistical problems faced by the group of seventeen students in 1996 was the removal of as much as two metres of sediment that overlay the remains of the fur trade store. Since the early 19th century, deposition in this area by both cultural and natural agencies has resulted in the accumulation of several layers of mostly sandy fill which have served to level the area into a terrace raised a few metres above the original lake level. An early depiction of Beasley's establishment is pictured in Elizabeth Simcoe's diary when she and her husband, Lieutenant Governor John Graves Simcoe, visited Beasley in the spring of 1796. A sketch shows a small cabin on a low bank overlooking Burlington Bay with a wharf visible in the foreground. Several more buildings are depicted on two more plans of the area in 1813 and 1823 when the British army occupied Burlington Heights and used Beasley's establishment as the landing place for access to the top of the Heights some 30 metres above lake level. This fur trading complex can be traced to a 1798 reference in which Beasley requests permission to contract for the construction of a wharf and storehouse.

Analysis of the stratigraphy and artifacts from the 1995 excavations suggested that the deep fill covering the Beasley complex was the result of intentional filling of the landing area beginning with the military occupation and continuing in the 1840s when Sir Allan MacNab used the area below his 'Castle' as a landing complete with wharf and storehouses. Indications of natural sedimentation occurring as a result of slopewash from nearby Burlington Heights was further suggested by several thin layers of sand and cobble fill interspersed between layers of building debris. As much as one metre of this material was deposited in the late 19th century, when the next owner of Dundurn Castle, Senator Donald McInnes, filled 'Beasley's Hollow' during renovations to the Castle in the 1870s.

Prior to excavation, a decision was made to remove this latest fill using an expedient method adapted to the particular conditions at the site. Analysis of the 1995 stratigraphy and artifacts had shown that the 1870s fill contained an assemblage of

European artifacts dating from the late 18th century to the late 19th century. In addition, several prehistoric period artifacts such as projectile points dating from the Late Archaic and Woodland periods also indicated that the fill had been derived from previously buried deposits. In view of this it was deemed necessary to sift the more than one metre of overlying sediment, although there was little reason to excavate the sediment by trowel. Consequently, two areas (referred to as the East and West Area), each measuring about 36 square metres were excavated stratigraphically by shovel and pick and all sediment from each of three massive layers was screened through 1/4" wire mesh. However, rather than the traditional tripod screens, two screened troughs measuring five metres in length were constructed and the sediment was dumped into each, wheelbarrow by wheelbarrow. This procedure proved particularly effective and allowed for the expedient excavation of late 19th century fill layers and the recovery of many artifacts dating from various periods of occupation. More importantly, the adoption of these methods allowed for the exposure of deposits dating to the late 18th and early 19th century by the end of the 6 week field school. After removing these layers of late 19th century fill students worked in pairs in 2 x 2 metre square units laid out within the East and West areas. Stratigraphic recording using the Harris matrix method (Harris 1989) was adopted and excavation proceeded by trowel through a series of deposits which in some cases exceeded another metre in depth: by the close of the season some units had reached a depth of two metres below ground surface (Figure 2).

OBSERVATIONS:

Excavation in the West Area resulted in the exposure of a possible structure as indicated by a layer of charcoal and burnt building debris overlying subsoil. Artifacts found within several thin charcoal deposits consisted of ceramics, predominantly creamware, wrought nails, container glass, bone, window glass and a few pieces of chert detritus. The absence of later ceramic types such as pearlware suggested a late 18th century date rather than an early 19th century date for the deposit. Despite the absence of architectural features such as walls, post moulds or fireplaces for example, the presence of hundreds of nails and window glass sherds indicated at the very least the proximity of a late 18th century structure.

In another excavation unit in the West Area, evidence of a native campsite was exposed. A few sherds of cord-marked ceramics and lithic debitage in association with a hearth indicated the presence of what may be an *in situ* Middle Woodland occupation. Further investigation of the prehistoric component of the site is scheduled for future seasons.

Another feature of particular interest insofar as it provides insight into specific site formation processes acting on the site in the past, was a deep crevasse which appears to have destroyed a significant portion of the site. Stratigraphic analysis suggests that this particular erosional episode occurred sometime around the middle of the 19th century. In an interesting example of uniformitarianism, an overnight rainfall in 1995 resulted in the opening of a crevasse in Burlington Heights and the deposition of 20 to 30 centimetres of sediment over the entire site area in an alluvial fan. Additional evidence of previous erosional episodes was subsequently found in the East Area.

EAST AREA

In contrast to the West Area, excavation on the east side of the site provided substantive evidence of one and probably two structures. Below almost two metres of deposit, a rubble wall was exposed

for a length of about 5 metres. Excavation was not completed on both sides of the wall, although on one side of the structure a black deposit containing charcoal and evidence of floor sleepers may represent the interior of the building. A considerable quantity of artifacts were recovered including ceramics, again predominantly creamware, container glass, trade beads, nails, window glass, musket balls and flints and a very large sample of faunal bone. Although the bone has yet to be analyzed, a cursory examination suggests that a significant portion of the large mammal bone sample, comprised mostly of deer, pig, and cow, had been fractured rather than being cut or sawn. Continued excavation within the structure is scheduled for the upcoming season.

In another unit, evidence of a fireplace may have been found as a layer of deteriorated red brick was exposed on the final day of excavation. The orientation of the feature corresponds to the alignment of floor boards recorded in an adjacent unit in 1995 and suggests the presence of yet another structure. Of interest though, is the different orientation of this structure in relation to the other structure defined by the wall discussed above. Although continued excavation is necessary, it appears that two superimposed structures may be present within the East Area. An analysis of the 1813 and 1823 plans mentioned above, supports this interpretation. Structures shown on each plan are clearly oriented at different angles relative to the shoreline - angles that correspond closely with the exposed archaeological features. Based on this, it seems likely that Beasley's fur trade period structures may have been razed for the construction of other buildings designed for military use during the occupation of Burlington Heights from 1813 to 1815.

By the conclusion of the six week field season, an assemblage of artifacts attributable to the fur trade period had been recovered. A few silver trade brooches, glass trade beads, and ear bobs provided the tangible evidence of Beasley's involvement in the fur trade. When these are added to the assemblage of the hundreds of beads and other trade items recovered in 1995, an image of the type interaction between Beasley and his native trading partners begins to emerge. What is missing, however, and what remains to be established, is the actual presence of Mississauga natives on the siteduring this time. The recovery of modified European trade items such as perforated thimbles used as tinkling cones and modified scrap copper fashioned into janglers, for example, both of which have been found on other fur trade sites, would provide strong evidence of a native presence. The ability to assess the nature of interaction between both cultural groups would be greatly facilitated by the recovery of these types of objects within datable contexts. Questions concerning rates of cultural change would then be approachable and made especially meaningful when tied to the documentary evidence.

ACKNOWLEDGEMENTS

Thanks are extended to all involved in the project: Ann Herring, Chair of the Department of Anthropology at McMaster University; Aubrey Cannon, Professor of Anthropology and coordinator of the Field School; and Alan Harrison, Dean of Social Sciences have been instrumental in the continuation of the field school as a part of the academic curriculum at McMaster University. In addition, I wish to thank Bill Nesbitt, Curator of Dundurn Castle, for his unwavering support throughout the years and Marilyn Havelka, Manager of Cultural Services for the City of Hamilton. Also, Ruth McDougall, the Teaching Assistant for the course was tireless in her various duties as

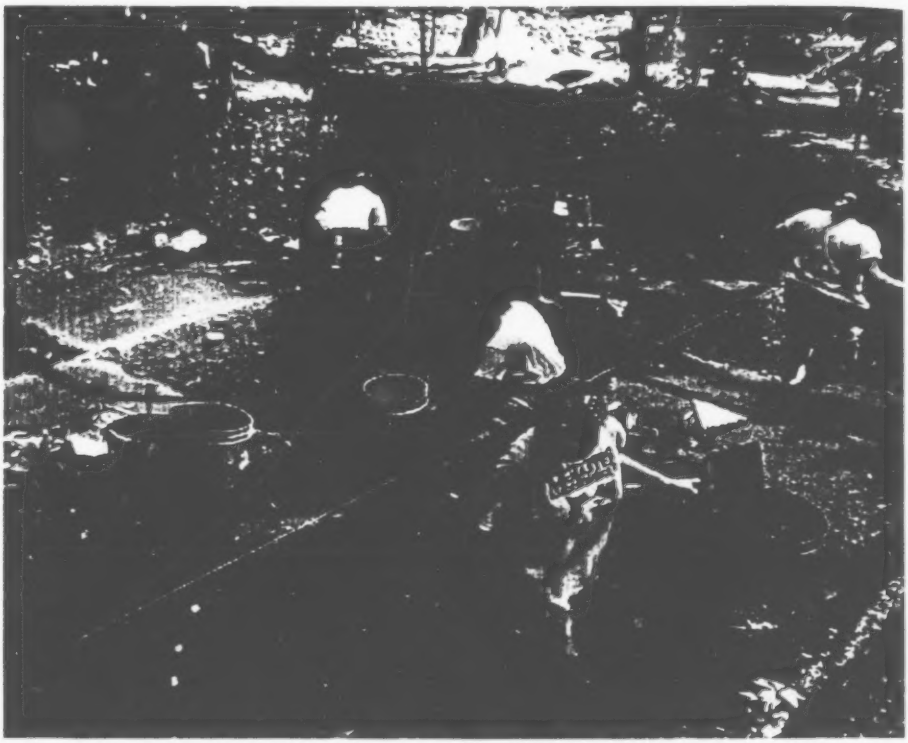

Figure 2. The remains of a late 18th century fur trade store were found below almost 2 metres of fill. A checkerboard excavation strategy was employed in the West area to provide stratigraphic cross-sections through this part of the site.

instructor. Jacqueline Fisher once again provided the field school with an informative lecture on lithic technology and assisted in the excavation, distinguishing herself as the first person to recover a glass trade bead - much to the chagrin of the students. Peter Queck kindly volunteered during the project and assisted in the excavation and post-excavation phase of the work. Lastly, the students of the 1996 project deserve special thanks for their perseverance in the face of adversity. Faced with the daunting task of manually removing truckloads of sediment they performed as any seasoned archaeologist will and bit the bullet to complete the job.

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SITE/PROJECT SPECIFIC ACTIVITIES

REPORT ON THE INVESTIGATIONS OF THE FORSTER SITE(AGGX-134), CALEDONIA, ONTARIO

JEFFREY A. BURSEY, DAVID G. SMITH AND GARY W. CRAWFORD

The Forster site is a multi-component, but primarily Late Woodland, village site located on the bank of the Grand River in Caledonia, Ontario. The site is situated on a flat terrace above the Grand River floodplain, approximately 100 metres south of the present river bank. Although situated within the Haldimand Clay Plain physiographic region, the soil matrix is primarily fluvial silt making it relatively easy to screen and allowing settlement patterns to be relatively well preserved.

The site was discovered and reported by W. Bruechert in the mid-1980s and registered as an Archaic component. Subsequent test excavations undertaken by Bruechert revealed settlement patterns and produced a sizable assemblage of pottery sherds, suggesting the presence of a significant Late Woodland component, probably assignable to the Early Stage of the Ontario Iroquois Tradition. In 1994, Fred Moerschfelder brought the site to the attention of Smith who subsequently informed Bursey of the site and its Late Woodland component. The cultural affiliation of the site was of interest to both Smith and Bursey, for different reasons, and a joint project was devised: the Department of Anthropology at Erindale College provided the archaeological license, field equipment, student volunteers and facilities for processing the artifacts while Bursey assumed the responsibility for supervising the field and laboratory activities.

Excavation of the Forster site was initiated in order to address several research questions. First, the presence of a Princess Point component was suspected based on the results of Walter Bruechert's excavations in the mid-1980s. It was hoped that a more intensive investigation of the site would provide more data regarding Princess Point in southern Ontario which could be included in the Erindale College research program addressing the introduction of horticulture into southern Ontario. Specifically, it is a possibility that the Princess Point occupation may represent an example of an "upper terrace" occupation similar to the Young 1 site, also investigated by Smith and Crawford (1997). As of the end of the 1996 field season, other than the recovery of some stray pottery sherds from the surface of the site, the investigations at the Forster site had not produced any further information concerning the Princess Point occupation.

The principle aim of the Forster site investigations has been to explore the Early Ontario Iroquoian, Glen Meyer, occupation. From the context of the Erindale College research project, interest in this site stems from the site's potential to reveal information regarding the Early Ontario Iroquoian people two or three centuries after the Princess Point period and thus provide chronological context for the primary research topic. Additionally,

the site was targeted because it was one of the few Early Ontario Iroquoian sites known from the lower Grand River and, thus, is a potential candidate for the ancestry of the Anderson site (AfGx-54) investigated by Bursey in 1991 (Bursey 1996).

Investigations commenced in late September, 1994. Field work consisted of four surface collections and an exploratory (1 metre by 5 metre) trench. This transect was deliberately placed outside and to the east of the suspected limits of the Iroquoian component based on the surface distribution of pottery sherds. The trench was excavated in order to test the relative richness of this area of the site, to determine the soil characteristics and to assess the logistics of using 1/8 inch mesh for screening plough zone. All subsequent excavations of the Forster site have used 1/8 inch mesh and undisturbed subsoil features have been entirely floated.

During the 1995 field season, one surface collection was undertaken and excavations were initiated in two areas. The surface collection included the recovery of artifacts and locational information from the ploughed fields on the flood plain between the Forster site terrace and the current banks of the Grand River.

The first 1995 excavation area consisted of a north-south trench, measuring one metre by five metres, extending down the terrace slope along the north side of the site in order to locate undisturbed midden deposits. The layer containing cultural deposits proved to be a homogenous topsoil with a depth varying between 30 and 40 cm. The soil of this particular excavation transect was highly disturbed, undoubtedly by rodents as at least one groundhog family appears to be presently occupying the slope and Mr. Forster maintains the slope edge has never been cultivated. Artifact yields did not appear to be particularly rich, suggesting midden deposits had not been present in this specific area.

The second excavation area explored in 1995 was a block excavation consisting of 39 one metre squares revealing a large number of post moulds and features. The distribution of posts and features was inferred to represent the north wall and interior of an Iroquoian longhouse. The results of the 1996 excavations have led to questioning this conclusion (Figure 1).

During the 1996 field season, major tasks undertaken included further mapping of surface features of the Forster site area, the continued collection of artifacts exposed from cultivation and further excavations of the longhouse discovered in 1995. The latter two involved six surface collections of diagnostic artifacts and the excavation of 15 square metres to the south of the previous year's excavations revealing the south wall of the longhouse. Figure 1 is a map of the excavations to the end of 1996. A total of 142 interior and wall post moulds and 25 features have been recorded and excavated thus far including three presumed historical disturbances. The largest of the latter, which partially destroyed the southern side of the western-most hearth (E750:N370 Feature 6), is interpreted to represent a tree-pull of one of the fruit trees along the fallow row between Fields 2 and 3.

Initially, House 1 appeared to be a relatively standard Iroquoian longhouse with a width of at least eight and a half metres. Double lines of posts, running roughly east-west were inferred to demarcate the north and south walls. An alternate hypothesis, however, would hold that a line of post running approximately NW-SE represents a house wall with the end located in the SE quarter of the plan. The previous north wall could then be an internal partition. The

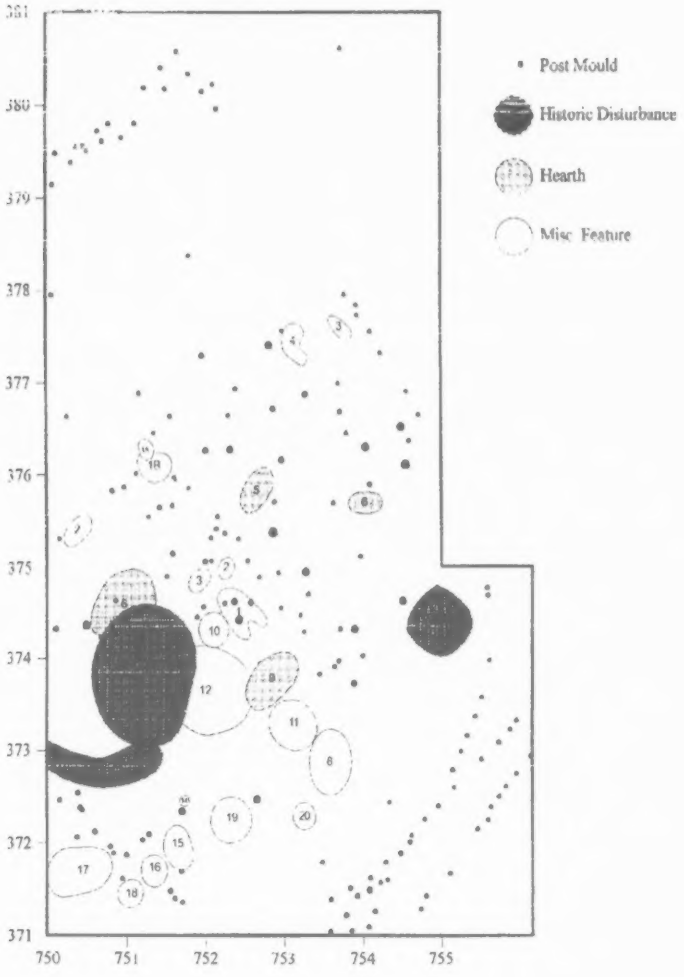

Figure 1. Forster Site Settlement patterns

presence of another structure south of this excavation area is also possible. The possibility that two or more houses are represented in this map will have to be

resolved through more excavations of this area.

One corn kernel obtained from an internal post mould was submitted for AMS dating with a result of 840±90 BP (TO-6343) (Smith 1997). This early 13th century date conforms well with expectations based on a cursory examination of material culture associated with the settlement patterns.

In addition to revealing aspects of the culture-chronology of the Glen Meyer on the lower Grand River, other significant results of the Forster site excavations relate to archaeological methodology. Since the number of individual, well controlled surface collections undertaken at the Forster site exceeds that known for any other site in southern Ontario, it can be anticipated that this data may contribute to the understanding of the strengths and weaknesses of this type of data collection. Of note, weathering dramatically affects the numbers of artifacts observable on the surface of the site. In the fall of 1995, six to eight weeks of weathering of the relatively light soil, including several heavy rains, were insufficient to ensure adequate visibility of surface artifacts. Indeed, several collections over this period produced barely a dozen diagnostic artifacts and pot sherds (and relatively few chert flakes), while the following spring several hundred diagnostics were recovered as well as literally thousands of chert flakes. Surface inspections immediately after ploughing frequently reveal not a single artifact!

Screening plough zone also indicates that cultural patterns may not be as disturbed by ploughing as many believe. Artifact densities in the thousands from squares over the longhouse interior give way to densities in the hundreds beneath the house bunklines.

ACKNOWLEDGEMENTS

The Forster site excavations were undertaken under a license issued to Crawford. A large number of people volunteered, both for the field work and for the artifact processing up to the end of the 1996 field season including, but not confined to, Rick Cahais, Jackie Dolling, Larry Drew, Bonnie Glencross, Dan Long, Elizabeth Major, Andrew Murray, Katherine Schoenberger, Candie Smith, Elizabeth Tapia, Elias Tabar, Francois Vigneault and Howard Watson. Fred Moerschfelder, as always, proved to be a valuable and reliable resource and friend. Finally, Mr. and Mrs. Forster were most gracious and patient in allowing relative strangers to dig up their vegetable garden.

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PETUN AREA 1996

CHARLES GARRAD

During 1996 the writer principally: [1] continued excavations on the McQueen-McConnell BcHb-31 archaeological site under Licence 96-080; [2] observed a number of sites and updated information on Ministry file under Licence 96-081; [3] promoted scholarly research through the Petun Research Institute.

THE McQUEEN-McCONNELL (BcHb-31) ARCHAEOLOGICAL SITE

The excavation in 1996 of part of a disturbed midden on the McConnell segment of the McQueen-McConnell (BcHb-31) Archaeological Site, near Collingwood, Ontario, continued from 1995, but was conducted in 1996 as a research project of the Petun Research Institute (Inc.), under Licence 96-080. The work was offered as a Volunteer Opportunity under the Passport-to-the-Past program of The Ontario Archaeological Society (Inc.), all with the gracious consent of the site owners, Mr. & Mrs. William and Helen McConnell.

The 1996 excavation was of one week duration (July 7-13), with prior site preparation and subsequent artifact analysis and report compilation. Six one-meter squares were completely excavated by trowel in 5 centimetre levels to subsoil and backfilled, including one square which had been left open from the previous year. The existing grid system laid out in 1993 was continued, and is left in place for next year (1997). Artifacts were washed and conserved daily as necessary. Analysis and recording by the writer took place during the fall and early winter. The participating crew comprised Gladys & Les Aslett, Henry Cary, Jennifer Gresham, Kay Hodgins, Ian Bell, Robert Burcher, Dr. Evelynne Bird, Susanne Wilson, Darryl Wines, Allyson Brady, Thomas Krahn, Jennifer Priest, Ellinor Malley, Caroline Minnikin. Supervisory and experienced staff were Janet

Figure 1. A uniquely modified clay pipe from the McConnell segment of the McQueen-McConnell BcHb-31 site, drawn by Kay Hodgins, of Barrie, Ontario.

103 Anndale Drive
Toronto, ON M2N 2X3

Table 1: 1996 RIMSHERD TYPES, TOTALS, PERCENTAGES from McQueen-McConnell Site

	n	%
Black Necked	1	1
Huron Incised	13	16
Innisfil Collarless	1	1
Innisfil Plain	1	1
Lawson Incised	1	1
Niagara Collared	1	1
Sidey Notched	61	77
Warminster Crossed	2	2
Total	81	100%

Turner, Ella Kruse, Anne La Fontaine, and the writer.

RESULTS

The 1996 recoveries were consistent with the existing interpretation of the deposit as belonging to the protohistoric GBP1, determined by earlier finds of European brass and copper. A total of 5,640 artifacts were recovered, including three coronet clay pipe bowl fragments, and 81 typable rimsherds, listed below (Table 1). Two of the three clay pipe fragments restored to create a partial Coronet pipe of an early style appropriate to GBP1, and which had been uniquely modified by having two holes drilled into the stem (Fig. 1). The pipe was the subject of a presentation to the Toronto Chapter of The Ontario Archaeological Society in January 1997. Details of the pipe were subsequently published (Garrad 1997). It was again observed that the rimsherd sample was greatly dominated by a single type, Sidey Notched, at 77%, and that Sidey Notched rimsherds are distributed throughout the midden at all levels. Pottery quality varied but was usually fairly good. Chert was overwhelmingly (89%) from a local Fossil Hill formation outcrop. 741 chert objects were recovered, but only four tools were recognized, three scrapers and a projectile point, suggesting an extensive on-site manufacturing industry for off-site use. Five drilled sandstone discoidal beads, seven polished bone awls or pins, four polished bone tubes and a bone projectile point were recorded. Faunal and fish bone, unmodified clam shell, corn kernels and cobs, and nuts, indicated a mixed diet.

That the midden deposit, although extensively disturbed, nevertheless justifies careful excavation, and is still fairly rich with material when excavated carefully, was confirmed. Work will continue in 1997, and more advanced artifact analysis will occur when the excavation is completed.

Artifacts recovered in 1996, together with field records, have been placed in the Petun Archaeological Zone Artifact Repository maintained and funded by the Petun Research Institute (Inc.), 103 Anndale Drive, North York, Ontario M2N 2X3.

OTHER WORK

Several area archaeological sites were visited or observed, for which Archaeological Site Update forms were subsequently filed with the appropriate authority. No artifacts were removed. Some effort was devoted to

relocating the Milne BcHb-28 ossuary, excavated in 1953 by the University of Toronto. Professor Helen Devereux, who, as a student, formed part of the excavating crew, and Mr. Howard G. Milne, who found the ossuary in 1953 on the north road allowance bounding his farm, were accompanied by the writer as they attempted to relocate the site from memory, on the shoulder of the road and partly beneath it. No physical evidence was found, but there was agreement as to its location. The location information was forwarded to Erindale campus of the University of Toronto, where the osseous material excavated in 1953 was known to be in 1989, but was not acknowledged. The demolition of the "Sons of Scotland Hall" in Duntroon was monitored and photographed. Articles recording the event were submitted to and published by the Stayner Sun and The Sons of Scotland Benevolent Society.

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MILITARY SITES ARCHAEOLOGY, PARKS CANADA, ONTARIO REGION: 1996

JOSEPH LAST

During the 1996 field season, Professional Services, Ontario Region, Parks Canada, undertook archaeological excavations at several military sites in Ontario. The aims of the projects were singular in focus: to evaluate the potential impact of proposed conservation activities on extant historic structures and associated resources. Assessment incorporated several mitigative strategies ranging from core sampling to test excavation and monitoring. Projects involved the stabilization of the Shoal and Murney Martello towers in Kingston; repairs to the main gate and traverses at Fort Wellington, Prescott (Stephen Mills this volume); the rehabilitation of the Commissariat Office and fence realignment and service upgrades at Fort Malden in Amherstburg; and the retrofitting and repairs to the reconstructed blockhouses and stone retaining wall at Fort George, Niagara-on-the-Lake (Stephen Mills this volume). The investigations enhanced, and sometimes greatly increased, our knowledge and understanding of the historic resources within the study areas. By providing information regarding the contexts and integrity of the archaeological resources, they helped make informed recommendations to Site and District CRM Managers.

CRM Professional Services
Department of Canadian Heritage
111 Water Street East
Cornwall, Ontario

THE SHOAL MARTELLO TOWER, KINGSTON

Permit Holder: Joseph Last [Parks Canada, ORO Permit 96-0005H]

Constructed upon a shoal within Kingston harbour, the Shoal Martello Tower stands as a landmark to the city's military heritage (see Figure 1). As a component of Kingston's defenses, it worked in concert with three other Martello towers: Cathcart Tower on Cedar

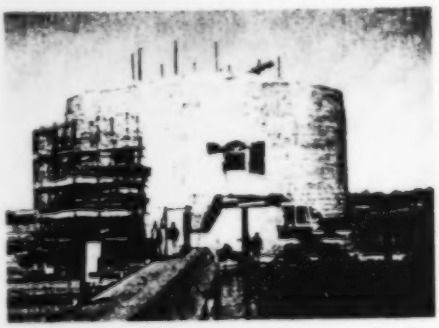

Figure 1. View of the Shoal Tower during stabilization. Photo by J. Last.

Island, Fort Frederick on Point Frederick, and Murney Tower at Murney's Point.

While similar to its land-based counterparts, the Shoal Tower possessed several design elements specific to its marine location. Of note was the construction of two interior latrines. Located on the terreplein, the latrines were incorporated into the parapet wall of the structure (see Figure 2). They consisted of wooden seats or benches

Figure 2. View of the latrine doors on the terreplein of the Shoal Tower. Photo by J. Last.

suspended above a shared, cast-iron trough that channelled waste into a central soil pipe. Housed within the tower wall, the pipe exited the structure somewhere below the harbour water line. During the 1972 investigations of the tower (Harris 1976), the latrines were recorded, but because of inaccessibility, the location of the soil pipe opening and associated deposits were never noted.

The present stabilization of the Shoal Tower allowed for the investigation of the pipe opening. It also aided the recording of structural elements exposed through the construction and partial de-watering of a temporary coffer dam (Last 1995, 1996a). Additional goals included obtaining information about surface elevations of bedrock around the tower to determine the thickness of the overlying harbour deposits. The two-day investigation was successful in plotting the harbour floor topography and found the soil pipe opening. The latter was a rectangular aperture measuring 54 centimetres wide by 32 centimetres high. Located 1.29 metres below the high water mark, the opening permitted wastes to settle about the foot of the tower and to be borne away by water action.

Emptying bodily waste into natural water systems was a common practice for coastal fortifications throughout the British empire. It persisted in Kingston as late as 1862, where latrines at Fort Henry "project[ed] into the arm of the lake by which the contents [were] received and flushed away" (Great Britain, Army Medical Department 1864:381). While wastes from the Shoal Tower were similarly disposed, their extent and integrity are unknown. Unaffected by the de-watering of the coffer dam, they remain submerged and buried beneath the silt-covered floor of the harbour. Recognizing the potential for comparative analyses with other contemporary, military latrine assemblages (Last 1996b), the location was recorded to minimize disturbance during tower repairs and to identify it for future research and evaluation.

THE MURNEY MARTELLO TOWER, KINGSTON

Permit Holder: Joseph Last [Parks Canada, ORO Permit 96-0006H]

Murney Tower was one of Kingston's four Martello towers planned by Colonel Holloway, commanding Royal Engineer in Canada, to defend the naval dockyard and the mouth of the Rideau Canal. Built on Ordnance lands at Murney's Point, the redoubt guarded the lake approach to the city and acted as an auxiliary support to the towers protecting the harbour (Saunders 1976). The Board of Ordnance awarded the contract for construction to George Davidson, in late January 1846. By November the tower and its furnishings were completed.

The smallest of the Kingston Martello towers, the two-storey structure measures 17.06 metres in basal diameter and stands 10.97 metres in height (see Figure 3). The tower possessed several defensive features normally employed on larger works. These features include a dry ditch and glacis that protected half the tower from direct fire; four caponnieres that provided effective flank fire within and about the ditch; and a radially shaped counterscarp that enhanced ricochet fire.

A recent engineering assessment of the 150-year-old counterscarp revealed that it had succumbed to ravages of time and had begun to buckle and fail. This prompted a three-week investigation to obtain information about the nature and integrity of the cultural resources along the north glacis, to evaluate their significance, and to establish a mitigative strategy for the proposed stabilization activities. In total, five excavation units were opened. Testing occurred beside the crest of the counter scarp wall, along the northeast corner of the glacis, and in the northeast corner of the ditch. The investigations discerned four discrete occupation phases: Post-1972 Occupation, 1933 Repair Activities, Post-1846 Occupation, and 1846 Construction Activities.

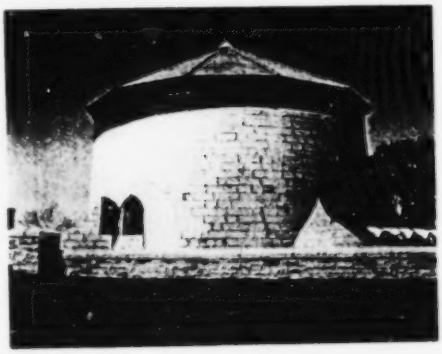

Figure 3. The Murney Tower showing the parapet wall of the counterscarp. Photo by J. Last.

POST-1972 OCCUPATION:

The post-1972 phase consisted of recent sod and soil development, and the existing concrete sidewalk that encircles the counterscarp. Twentieth century artifacts, most of which were fragmented beverage bottles found within the ditch, characterize the assemblage. Investigations also uncovered telephone and hydro lines converging at the foot of the bridge that now provides visitor access to the tower. A concrete apron, encasing the bottom courses of the counterscarp, was also revealed within the ditch.

1933 REPAIR ACTIVITIES:

Deposits relating to the 1933 repairs include the remains of an earlier pedestrian walkway, mirroring the current route. The sub-bed for the sidewalk sat upon a parged surface of

Portland cement. This imperious capping sloped away from the tower and represented an elegant method of diverting water away from the ditch and counter scarp wall. Other features dating to the repair phase include the present parapet footing. Test excavations west of the access bridge revealed a concrete sleeve below this feature. While it initially provided additional support to the counterscarp, it had since separated away from the north face of the wall. This has contributed to the decline

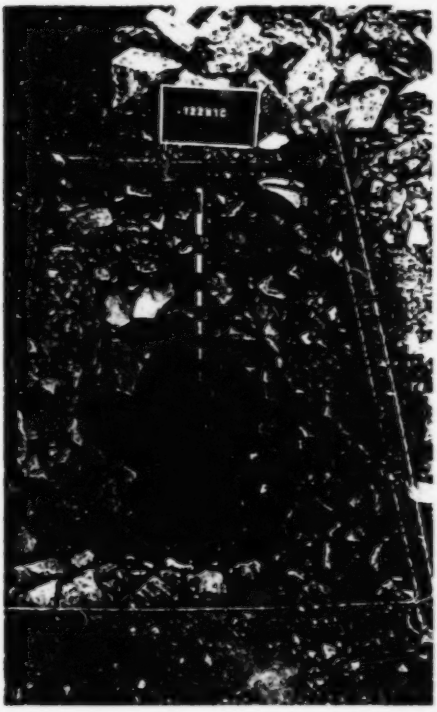

Figure 4 .View of the unconsolidated limestone rubble used to form the glacis. Photo by Stephen Mills.

of the counterscarp by channelling water into, rather than away from, the ditch.

POST-1846 OCCUPATION:

Within the ditch, investigations encountered an occupation layer at a depth of 30 centimetres below surface. A review of the artifacts suggests it to be a mid-19th century deposit containing material similar to that found for the Royal Canadian Rifle Regiment's occupation at Fort Wellington (Last 1996b). Companies of the RCRR were intermittently barracked in the Kingston towers during the second half of the 19th century (Saunders 1976). Additional domestic artifacts were recovered from sheet scatter deposits on the surrounding glacis. A percussion cap stamped with the Board of Ordnance broad arrow was one of the few military items contained within the assemblage. Percussion caps with such head stamps went out of production in 1855 (Gooding 1966).

1846 CONSTRUCTION ACTIVITIES:

Below the 1933 repair deposits lay successive layers of undisturbed limestone coursing and rock-spall levelling fills. They constitute historic backfill used to support and buttress the counterscarp wall. For the most part, the stones were redeposited bed rock obtained during the excavation of the ditch. Specifications of the 1846 contract detail the construction sequence and document the excavation of earth and stone about the tower. However, they do not allude to the extent of excavation. Testing of the glacis suggests that the initial ditch excavation extended at least 8.0 metres further to the north making it substantially larger than the final footprint of the ditch. During the construction of the counterscarp wall the over-cut area was backfilled. Where examined, the glacis is composed primarily of unconsolidated rubble (see Figure 4).

Within the ditch, excavations encountered a surprisingly thick deposit of overburden (45 centimetres). The bottom most layers were composed of rock-spall dating

to the construction phase of the tower. They lie directly upon bed rock and, at the time of excavation, were partially submerged by ground water. Since the overlying occupation layer demonstrates that the deposition of rock-spall was an early event in the history of the site, the activity may represent an initial attempt to combat the effects of a high water table. The raising of the ditch floor occurred before the construction of the counterscarp walls, for they are not built directly on bedrock but lie upon a layer of rubble.

FORT MALDEN AND THE COMMISSARIAT OFFICE, AMHERSTBURG

Permit Holder: Joseph Last [Parks Canada, ORO Permit 96-0011H]

In support of site development and rehabilitation, excavations were undertaken at the Commissariat Office and at Fort Malden. The 1832 Commissariat Office was an integral part of the military supply operations at Amherstburg, and remained so until 1856 when the property was formally transferred to the Ordnance Lands in Canada (see Figure 5). Ownership eventually passed into private hands but Parks Canada subsequently purchased the property in 1984. During the intervening years the property saw many alterations to the grounds and structure. Excavations assessing the archaeological potential of the historic resources have occurred intermittently over the past years in support of structural repairs (Last 1995). In 1996, additional investigations were required to assess and mitigate the proposed upgrade to the drainage system and to the gas and sanitation services to the building. The proposed installation of an external cooler condenser also required archaeological intervention.

Test units were opened midway along the north face of the building and at the southwest corner of the structure. Four

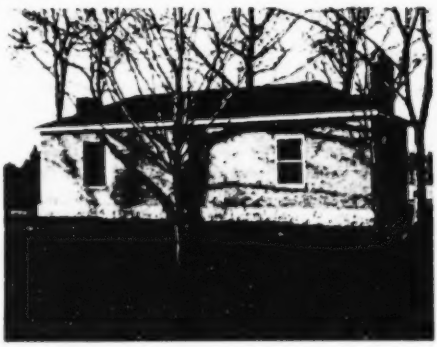

Figure 5. View of the Commissariat Office after restoration. Photo by J. Last.

trenches were also placed along the intended route of the sanitary line running from the east side of the Commissariat Office to Dalhousie Street. The findings from the investigation correlated well with the past excavations. The general stratigraphic sequence consisted of a 10 centimetre-thick layer of sod and recent soil development followed by an occupation layer of equal thickness. Below the latter were a transitional 'B' Horizon and 'C' Horizon parent material, both of which were characterized by dense and tenacious clay.

Features included the remains of a post and a post fill-in that once demarcated the northern limits of the property. Each had its own footing trench, the superposition of which demonstrates that they were not contemporaneous but rather represent a sequential activity of replacement and renewal. A previously unknown terra cotta drain was also observed running west away from the southwest corner of the Commissariat Office (see Figure 6). The tiles

were 10 centimetres in diameter and were uncovered at the depth of 32 centimetres below surface. In all likelihood, they drain to the Detroit River.

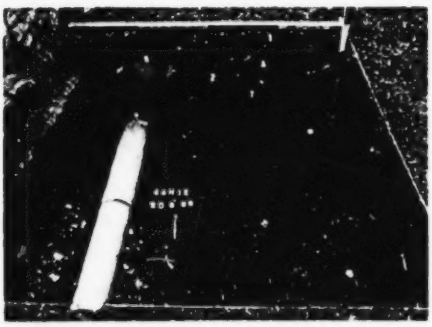

Figure 6. View of modern weeping tile (to the left) and 19th century terra cotta drainage system in excavation unit 44H1E. Photo by Kevin Fox.

The investigations at Fort Malden involved two small projects relating to fence relocations along the southwest corner of the site and service upgrades to the Pensioner's Cottage. Begun in 1796, Fort Malden developed into the War of 1812 headquarters of the Right Division of the British army. Until its capture by American forces in 1813, it played a key role as an advance supply depot and as a mustering station for attacks along the Detroit frontier. The American occupation of Fort Malden resulted in major modifications. Using the existing southwest bastion as an anchor, Duncan McArthur, commander of the district, reworked the site into a smaller version of the original. Much of the present archaeological work at Fort Malden focuses on understanding these and other alterations to the site. The 1996 projects allowed us to increase our knowledge of the stratigraphic sequence for previously unstudied areas.

Mitigation for the fence alignment involved core sampling along the west property line bordering the Detroit River and along the southern edge of the site, parallel to the crest of the glacis. By the river bank, investigations revealed 55 centimetres of modern fill overlying a historic 'A' Horizon. This indicates that little modification was made to the original lay of the land during the construction of Fort Malden. Conversely, the terrain to the south was substantially altered. About 0.65 metre of historic fill lay above the 1796 buried sod line. This suggests that the original elevation was increased in height to form an effective glacis. This is in keeping with contemporary thought, "Some authors think [glacises] never answer the experience; however, M. Vauban was so sensible of the goodness, that he never failed to make them when he found the ground convenient for it; because, when such works are defended by a skilful governor, they will make a noble defence" (Smith 1969 [1779]:102).

Testing also occurred in the maintenance compound to assess the impact of gas and hydro upgrades to the Pensioner's Cottage and the Visitors' Reception Centre. The excavations encountered deposits resulting from the demolition of the Hough residence located west of the compound. A very densely compacted 'A' Horizon was also discovered at a depth of 30 centimetres below surface. The layer contained artifacts dating from the late 18th century to the 1972 demolition of the house. As such, it represents a continuum of occupation spanning most of the site's history. To avoid disturbing the deposit, the services were installed using a plough that reduced the trench width to 10 centimetres.

FORT GEORGE NATIONAL HISTORIC SITE

Permit Holder: Joseph Last [Parks Canada, ORO Permit 96-0020H]

During the War of 1812, Fort George's greatest failing was its size. Originally conceived as a supply depot, its defenses were never equal to Fort Niagara: the American stronghold across the river. First the British, then the Americans, attempted to make Fort George more tenable. Although Lieutenant-Colonel R.H. Bruyères suggested reducing the southeast front, it is not known if this proposal was realized. However, American forces, during their occupation, essentially cut the fort in half, modifying the trace into a five-sided configuration.

During the 1974 excavations at Fort George, John Wilson encountered a linear feature running on a diagonal beneath the present reconstructed blockhouse no. 2 (Wilson and Southwood 1976). This he interpreted as the 1813 fortification ditch. Excavations revealed that it cut through the foundations of the original 1796 blockhouse and thus postdated the demolition of that structure While interested in the feature, it was not the primary focus of Wilson's excavations. Consequently, little of it was excavated and those portions that were received only cursory provenience control.

An opportunity to revisit this feature arose in response to a proposal to upgrade the electrical services to the blockhouse. While most of the service ran within existing trenches, additional excavation was required along the southwest corner of the blockhouse. The objectives of the archaeological investigations were to provide a 'resource free' corridor for the service installation while assessing the stratigraphic sequence associated with the defensive ditch and to correlate our findings with those of John Wilson's 1974 excavations.

The investigation consisted of three contiguous excavation units, placed parallel to the west wall of blockhouse no.2 (see Figure 7).

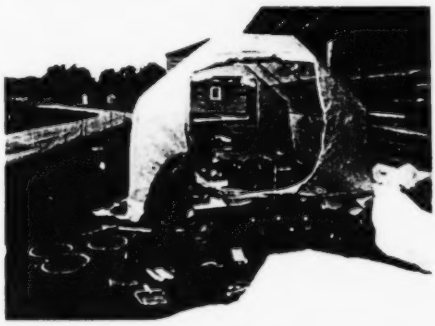

Figure 7. View of excavation in progress. Blockhouse no. 2 is to the right. Photo by J. Last.

Two buried sod lines were encountered dating to 1973 and 1937. Below the latter was a succession of five fills. Although they contain artifacts dating to the first quarter of the 19th century, they were deposited during the 1937 reconstruction. Retracing Wilson's excavations allowed us to quickly locate the portion of the ditch that he exposed in 1974. Expanding upon his work, the excavations were extended to the south, eventually uncovering approximately 5.0 metres of the scarp and ditch floor. The bottom of the defensive ditch was reached at a depth of 1.6 metres below grade. The scarp face was inclined on a 45-degree angle and showed signs of excessive water erosion and redeposition. Multiple varving was observed at the foot of the scarp and spread southward, covering about 2.0 metres of the ditch floor.

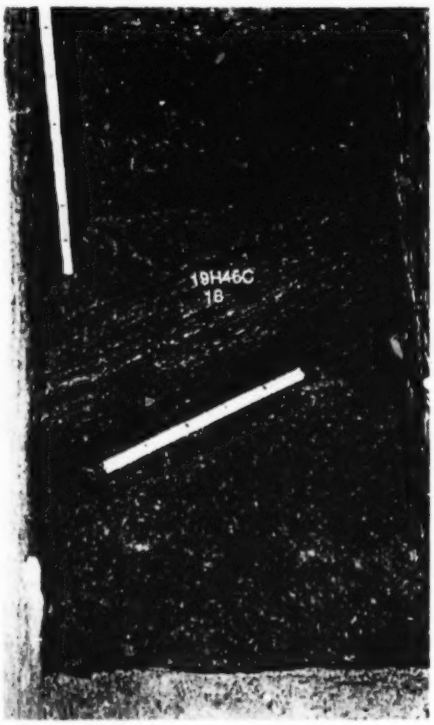

Figure 8. View of log lying on the 1813 defensive ditch floor. Photo by J. Last.

Excavations also uncovered a degraded log. It ran parallel to, and beside, the foot of the scarp. Wilson recovered similar logs during his investigation of other portions of the ditch (Wilson and Southwood 1976). The log was 22 centimetres in diameter with a squared top surface (see Figure 8).

A gouge or trough ran longitudinally along this flattened surface. Unfortunately, it is not certain if this is the result of differential decay or if the groove was culturally produced. In some respects, it resembles sill plates used in French piquet construction (Moogk 1977) and may in fact, be a sill plate for a palisade line, such as found at Rocky Mountain House (Steer and Rogers 1978). If this is true, the construction of the defensive ditch could plausibly be attributed to the American occupation of Fort George. They, rather than the British, were more apt to incorporate French building technique into their fortification design.

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SALVAGE ARCHAEOLOGY AT PARKS CANADA, ONTARIO REGION

STEPHEN MILLS

Archaeological excavations were carried out at Fort Wellington, in July 1996, to investigate two areas of the fort's defenses prior to masonry repairs and revetment replacement. The entrance wing walls were in need of attention to repair cracks in the masonry and log revetments had to be replaced on both the east and west epaulments (traverses). The back of each wing wall had to be exposed to a depth of close to a metre and the revetment replacements required the digging of a 2-metre deep trench to remove the old, rotting logs and set new ones in place. Although these revetments had been replaced at least twice in the past (in the 1920s and 1950s), no archaeological record existed for either area. This was also the first archaeological investigation around the entrance gate.

Fort Wellington was completed during the latter part of the War of 1812 in the fledgling town of Prescott, along the St. Lawrence River. Falling into disrepair after the war ended, the fort was reconstructed between 1838 and 1839 in response to the Upper Canada Rebellion. Although the surviving documents from the first Fort Wellington are limited and of a small scale, the original main entrance gate is believed to be in the same location as the second fort's main gate (Figure 1). It was hoped that the archaeological investigation would provide information on the structural details of the first gate, as well as the construction sequence of this section of the ramparts. The epaulments were not a part of the first fort. They were added when a defensive ditch was deepened around the later fort and were designed to provide enfilade fire across the defensive ditches. These 3-metre high earthworks had a firing step constructed atop of each, protected by a revetted parapet.

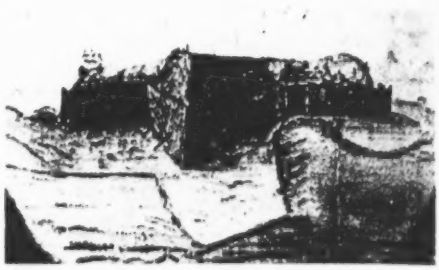

Figure 1. The original Fort Wellington, 1830. Thomas Burrows Sketch # 78. Note the main gate. (Courtesy of the Ontario Archives)

THE ENTRANCE WING WALLS

The investigation behind the entrance wing walls uncovered the footings and support stonework for each wing. Oddly enough, each side was constructed somewhat differently.

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The east wing wall was supported by a substantial series of stones laid in step-like fashion, up to 60 centimetres wide. Several of the stones were keyed into the wall, providing additional support to the exterior facade (Figure 2). Irregularities in the top surfaces of the eastern wall support stones were smoothed over with mortar, which suggests that they were actually used as a set of steps for the builder(s) in addition to providing a foundation for the wing wall. Time had little effect on the masonry joints in the wing wall support stones or the footings. For the most part, the mortar in between the stones was in good condition and was still adhering firmly to the rocks. There were, however, some gaps in the stones where they butted against the interior face of the wing wall. On the western wing wall, the support footing was, at best, 30 centimetres wide and was not stepped as on the east side. Both wing walls sat on a 1.2 metre to 1.3 metre wide foundation.

As expected, the rampart construction sequence was recorded on both sides of the entrance gate. Between five and six strata of rampart fill was noted. An historic, buried sod horizon was recorded behind each wing wall. Artifacts from this stratum include artillery buttons, mid-19th century ceramics and a Sir Issac Brock token dated 1816. A copper friction bar from an artillery friction tube was also recovered. These three-inch long pencil-sized copper tubes were filled with a combination of combustible compounds and sealed on both ends. A roughened copper bar with a circular end was fitted through a slit at the top of the tube. The tube was inserted into the vent of an artillery and ignited by pulling out the bar. The friction caused by the roughened copper against the sides of the tube ignited the propellent, forcing a flame down into the cannon barrel which fired the cannon's charge. This refinement in artillery ignitions was first introduced in the 1850s (McConnell 1988: 370).

Another fascinating find was a post hole, found at the base of the western wing wall. This feature, measuring at least 40 centimetres across and more than 60 centimetres deep, is believed to have once held one of the revetment logs from the 1813 fort. The earthworks at Fort Wellington were originally faced with logs, which were removed in 1838 reconstruction (Figure 1). A late-19th century domestic midden deposit capped the post hole. Included in this deposit was an intact green-tinted vinegar bottle. The remnants of the paper label on the bottle indicated that it contained an award winning vinegar which had won gold medals at the 1878 Paris fair.

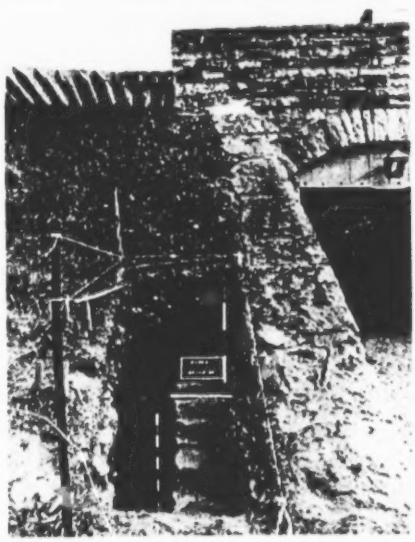

Figure 2. Fort Wellington entrance gate, east wing wall foundation. (Photo by author # 2H-2504M)

THE EAST AND WEST EPAULMENTS

The investigations on the east and west epaulments uncovered a complex stratigraphy

of between 42 and 33 distinct archaeological deposits respectively. Three separate revetments were discovered, including traces of the original 1838 revetment(s). Historic grades, representing the firing step and parapet surface, were noted on both epaulments at depths of between 12 and 22 centimetres below surface. These strata were followed by numerous layers of rampart fill. The later revetments had obscured all but the slightest vestiges of the original defenses. The 1838 revetment logs were, however, recorded behind the 20th century trenches. Evidence suggests that these logs were about 26 centimetres (10 inches) in diameter and were buried some 1.2 metres in the ground. Historic plans of the 1838 fort show small scale sections of the epaulments with below-grade elevations that conform with the archaeological data (Lee 1976: 96).

The revetment replacement will be done by hand, in an effort to limit disturbances to the cultural resources. Mechanical equipment would likely cause the complete destruction to any *in situ*, or even disturbed strata. By excavating the revetment by hand, the replacement will actually add to the site's formation process without destroying the entire archaeological sequence on these earthworks. Mechanical replacement of the revetment on top of the main earthworks inside the fort caused irreparable damage to *in situ* archaeological resources on the primary earthworks. The epaulment revetment will not repeat the same mistake. Future archaeologists, a generation from now, may investigate this activity when the need to repair the earthworks arises once more.

ARCHAEOLOGICAL EXCAVATIONS AT FORT GEORGE NATIONAL HISTORIC SITE

Permit holder: Stephen Mills
[Parks Canada permit 96-7H]

In June 1996, a two-week archaeological project was undertaken at Fort George National Historic Site to investigate two features at the base of the northeast glacis: a stone retaining wall and a historic road. The fort was built between 1796 and 1799 in the town of Newark, now Niagara-on-the-Lake. Originally planned as a fortified supply depot protecting the ordnance wharf at Navy Hall, on the west side of the Niagara River, it was strengthened and re-configured at the outbreak of the War of 1812. Heavily damaged during the battle of Fort George, it was subsequently captured by American troops on 27 May, 1813. Six months later the ruined fort was returned to the British. It was in British hands for the remainder of the war.

Fort George was reconstructed as a tourist attraction in 1937. This reconstruction included several new buildings and features which were not original to the early defences. One of the new features was an 84-metre long stone retaining wall at the base of the northeast glacis (Figure 3). This wall (known as the 1937 Stone Retaining Wall) ran parallel to the lower, or eastern end of the historic road.

THE 1937 STONE RETAINING WALL

Over time, the western end of the retaining wall has faltered. Underground springs on the glacis contributed to structural stresses on the masonry by continually saturating the ground behind the westernmost 15 metres of the wall. That portion of the wall was in danger of collapsing so repairs were slated for late Summer or Fall. These repairs necessitated the removal of the soils behind the wall, and rebuilding the damaged portions of the masonry. Owing to its connection with the 1937 fort reconstruction, this wall has been identified as a Level 2 resource and worthy of archaeological concern. It was anticipated that historic surfaces, namely the original late-eighteenth century glacis, survived beneath the

Figure 3 .View of the 1937 Stone Retaining Wall and the historic road (center of photo). Photo by author.

present surface and these would likely be impacted upon during the repair project.

Excavations on both sides of the retaining wall were designed to record information on the foundation as well as the nature of the soils behind the wall. Four excavation units were placed along the wall. They ranged in size from 1.0 metre by 1.0 metre to 1.0 metre by 1.5 metres. The scope of the project was broadened to include an investigation of the historic road adjacent to the 1937 retaining wall. Two units, each measuring 1.0 metre by 0.5 metre were placed 10 metres apart on the north side of the road.

The archaeological evidence suggests that the retaining wall was constructed at the base of the historic glacis. In an effort to keep the wall as straight as possible, portions of the glacis were cut into and later backfilled. This was most evident at the western end of the wall. The foundation, or footing for the wall was revealed in all four test units. The footing trench was investigated in three units. It appears that the entire footing trench had been filled with cement. No sign of a builder's trench, or wood impressions in the footing confirms this type of construction technique. The footing was first reached at a depth of between 74-77 centimetres below the surface on the south side and on the north side, at a depth between 11-12 centimetres below the surface. On both sides it began approximately 1.2 metres below the capping stones. Spalls of limestone masonry debris were set loosely into the top of the footing, as if they had fallen there while the cement was still wet. In one test unit, the footing had a peculiar sort of flange, rising some 11 centimetres above its surface. This phenomenon gave the impression that a U-shaped trough had been fashioned into the top of the footing to accept the retaining wall in that area.

Following the construction of the wall, the area behind it was backfilled, probably with the same soils removed during the excavation of the footing trench and the shearing of the glacis. The backfill deposits discovered behind the wall were between 75 and 80 centimetres deep. These deposits were thickest at the western end of the wall. The 1937 sod line was discovered beneath the retaining wall backfill on both sides of the

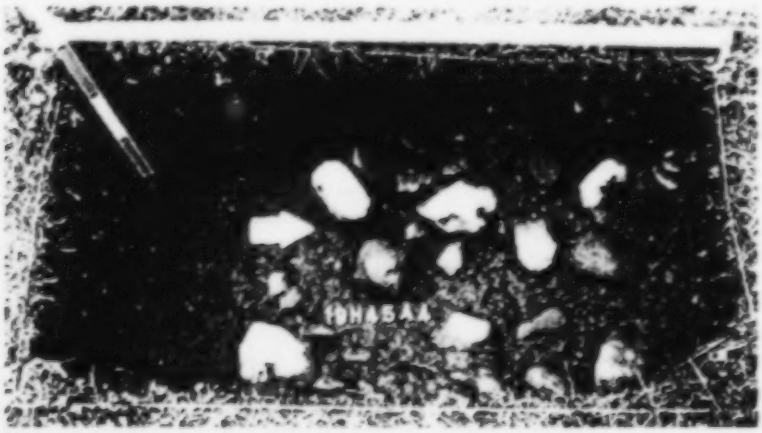

Figure 4. One of three buried road surfaces found on the historic road. (Photo by author, # 19H-567M)

wall. This 5-15 centimetre thick stratum represents the historic glacis from 1796 to 1937. Artifacts from this layer range from creamware and pearlware ceramics to 20th century crown enclosures. The mixture of artifacts confirms a wide date range for its deposit.

Beneath the glacis surface lay three to four strata of glacis construction-related fill deposits. The discovery of these fill layers indicates that a degree of levelling activity was necessary to create a uniform, descending glacis. Historic sketches and maps of Fort George show several low gullies on the east glacis. These gullies and any other low areas on the glacis were likely filled in to deprive the enemy any element of cover during an attack. Artifacts from these fill strata suggest that they date to the period of the original fort construction, *circa* 1796. An original sod horizon was recorded beneath the historic glacis fill deposits. Although the few artifacts found in this stratum were undiagnostic, its position beneath the glacis fill, and overlying undisturbed natural horizons indicates that it was the original sod line upon which the glacis was constructed.

The Historic Road

Several roads, or paths connected Fort George to the Niagara River. The main access ran from the fort's main gate to Navy Hall, the principle ordnance facility on the river. This road connects to the Otter Trail where it continues westward, past the fort to the Indian Council House and additional military facilities. The Otter Trail appears on some of the earliest maps of Fort George (dating from the 1790s) and is believed to predate the historic occupation of this area.

The testing of the historic road produced positive results of former road surfaces. It was anticipated that this road would be a "proper" roadway that could support the usual traffic one would expect to occur between an important military installation and its primary ordnance wharf. Macadamized roads, which employed a covering of broken rock spall on a prepared base were common in historic times and it was expected that a similar surface would be used for this road. In effect, this is what was discovered. Three buried road surfaces were

recorded, each constructed from rounded cobbles. Each of the first two road surfaces had a sandy clay substrate, which was obviously put down as a road sub-bed. (Figure 4). The deepest, and earliest surface, was little more than rounded stones thrown onto the existing sodline. Artifacts from all three road surfaces were highly fractured which attests to considerable pedestrian and vehicular traffic (here meaning horse or oxen drawn carts and carriages) on the roads. Although the two test units on the historic road were 10 metres apart, each exhibited co-relating road surface deposits.

Evidence of up to three buried sod horizons were also discovered beneath the earliest road surface. The deepest of these brought forth eighteenth century creamware ceramics, lithic flakes and a polished stone bead of possible Native origin. The 1813 razing of Fort George by the American Army may be represented by an extraordinarily high charcoal content from the top of this stratum. Mortar and brick fragments were also recorded in this and other deposits in this operation.

Conclusion

Although relatively short in duration, the archaeological excavations around the retaining wall and on the historic road were rewarding. The information on the backfill behind the retaining wall was used in formulating a design for the wall's repair. The saturated clay and sand deposits were replaced with granular-based fill and a drain. The documentation of the historic sod horizons beneath the 1937 construction-related fills provided important data on the topography before and after the construction of Fort George and has contributed to our knowledge of the historic landscape of Fort George.

While limited in scope, the testing on the historic road resulted in the discovery of several buried road surfaces. The continual resurfacing of this road proves that it was an important link between the fort and the Niagara River. Weather conditions and continual traffic over its cobble surface probably contributed to its deterioration and subsequent reconstructions. Future archaeological investigations along this 300-plus metre long roadway would help define its attributes and contribute to the interpretation of the Niagara military complex.

SALVAGE ARCHAEOLOGY AT BELLEVUE HOUSE NATIONAL HISTORIC SITE

Permit holder: Stephen Mills
[Parks Canada Permit ORO 96-1H]

A four-day salvage archaeological project was undertaken in early March 1996 at Bellevue House National Historic Site in Kingston. Bellevue was once the home of John A. MacDonald, before he went on to become Canada's first Prime Minister. It was built in the early 1840s on the outskirts of the town. Today, the area has developed into a mixed residential, institutional zone in the west side of Kingston's downtown core. Maintenance on the century and a half year old house is ongoing. The 1996 repairs included the repointing of the scullery (kitchen) foundation to alleviate water leaks in the basement. A surface drain and catch basin off the northeast corner of the house was also scheduled for replacement. Previous archaeological testing in the area had revealed the presence of undisturbed cultural strata near the foundation so further excavation was necessary to salvage archaeology materials and data prior to the repointing work. The kitchen door is located at the back of the scullery wing and it was suspected that domestic refuse was discarded out this door over the years. The archaeological excavation and the repointing work were carried out simultaneously, with the masons working on the north wall while the archaeologists worked on the east wall.

The north wall had been cleared by archaeologists in 1991. A heated, temporary shelter was erected against the side of the house to protect the workers from the sub-zero temperatures.

A 3.75 metre long stretch of the house foundation was exposed in a 1.0 meter wide trench along the east side of the north wing. A second, 80 centimetre square, unit was also dug near the existing catch basin/surface drain. It was revealed that 20th century plumbing and electrical service installations had disturbed about half of the soil deposits on the east side of the scullery wing. Nevertheless, portions of two undisturbed historic soil deposits were noted. Two other strata contained historic material, although they may represent earlier foundation repair and were probably not *in situ*. Undocumented details of the house construction and subsequent upgrades to Bellevue House's plumbing were also revealed.

A modern drain tile, buried some 60 centimetres below surface, had effectively displaced the soils above it. Four soil layers containing historic material lay beneath the sand bed supporting the tile. The first of these four had the typical appearance of an occupation deposit; rich organic loam mixed with masonry spalls and small stones. The artifacts from it and the fill layers below reflect the high status of Bellevue's inhabitants. Fragments from a number of porcelain and bone china tea sets were found, as was a broken leaded wine glass. Tablewares, made from blue transfer printed pearlware and refined white earthenwares, were among the domestic ceramic assemblages. Common structural artifacts were also present. Numerous fragments of butchered and sawn mammal bones recovered from the excavation attest to the primitive disposal pattern practised by the occupants, or their staff. It was obvious that, in addition to broken dishes, kitchen waste was also being tossed out the back door.

The exposed foundation afforded a good view of the variety of craftsmanship employed by the original house builders. Oddly enough, the quality of the stonework varied from side to side. Whereas the north side of the scullery foundation was expertly laid, using well-dressed stones tightly fitted together, the east side was built with irregularly sized, roughly hewn stones loosely fitted together. The actual footings of the foundation also varied, although this was not the fault of the stone masons. This, and previous archaeological excavations along all three sides of the scullery wing show this wing was primarily built on bedrock. The bedrock drops off on the east side which meant that the grade had to be raised to provide a level base to place the foundation. The fill chosen for this consisted largely of boulders mixed with smaller stones and organic soils. Settling of these deposits beneath the foundation appears to have resulted in the shifting of some of the foundation stones. This displacement of the scullery foundation stones allowed for moisture to enter the foundation and likely contributed to flooding inside the scullery.

The artifacts recovered from this brief salvage excavation bespeak of the refined eating habits of Bellevue's 19th century occupants. However, the vision of a scullery maid cleaning up after an exquisite dinner party and tossing the remnants out the back door is brought to life by the discovery of the same food remains a century or more later. The curious information on the varying construction detail of the house foundation also adds to our collective knowledge of early Victorian home building in Upper Canada.

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RECENT INVESTIGATIONS AT MIDDLE WOODLAND SITES IN THE LOWER GRAND RIVER VALLEY

TREVOR ORMEROD

During the fall of 1996, archaeological investigations were conducted at two Middle Woodland sites in the lower Grand Valley. The work marked the inaugural field season of a research project aimed at improving our understanding or the relation between the Princess Point Complex and local Middle Woodland precursors. This has come under considerable scrutiny recently and arguments have made proposing a migration of Princess Point Iroquoian-speaking people into Ontario(Snow 1996; Bursey 1995). In relation to the migration hypothesis, Fox (1995) has noted that too little is understood of the Middle Woodland of the Princess Point "heartland", making the origins of Princess Point difficult to interpret at the present time.

The first step in this research was to identify Middle Woodland sites that would be suitable for this study. Due to the nature of the research problem, single component Middle Woodland sites and sites with separate Middle Woodland and Princess Point components were deemed most valuable. Sites fitting this scheme were identified primarily by employing Stothers' (1974) notes regarding a previous survey of the study region, but were supplemented by information obtained from the Ministry of Citizenship, Culture and Recreation's database on sites in the lower Grand Valley. This resulted in both the Neumen (AfGv-3) and Hawthorn (AfGv-34) sites being chosen for investigation (Figure 1). A regimen of surface collection and testpitting was conducted at the Neuman site, producing several artifacts. In contrast, the Hawthorn Ridge site was only exposed to surface survey.

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NEUMAN

The Neuman site was originally excavated by Wintemberg in 1939, although all field notes from these excavations were later destroyed. The Neuman site saw further testing in the summer of 1974 when Stothers (1974) excavated a trench, five feet by ten feet in size, parallel to the river bank at the eastern edge of the property. In addition to the excavated trench, a small number of testpits were placed in unknown locations across the Neuman site and produced additional chipped lithics. The work by both Wintemberg and Stothers suggested the presence of both Middle Woodland and Princess Point components at the site.

Field testing was initiated at the Neuman site in October 1996 by the author and three crew members. The initial visit to the site consisted only of surface observations of the site area which revealed the presence of many artifacts, in particular chipped lithics, both along the river bank at this point. The

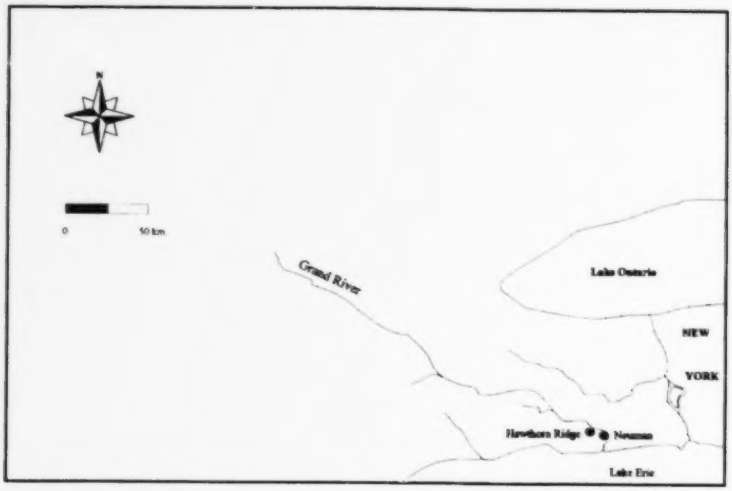

Figure 1: Middle Woodland Sites Discussed in the Text

second and third visits to Neuman were geared towards sub-surface testing of the site in order to determine the remaining extant of the Middle Woodland of Princess Point components. Three transects of testpits were placed across the east-west section of the site, with site boundaries being identified following Stothers (1974). Transects were placed 5 metres apart from each other and all testpits along the transects were 5 metres apart. All testpits at Neuman were positive, and artifacts observed during testing were heavily dominated by lithics. Artifacts were located primarily in the top 25 centimetres of each testpit and several testpits were dug down to 80 centimetres to ensure that cultural material was not located below this. Testpits revealed that a 25 to 30 centimetre level of gray-brown overlaid a base of yellow-brown Haldimand clay. The current resident of the property, Mr. Davies, reported that the site was plowed years ago although he could not remember when.

Artifacts recovered from the Neuman site including a large number of chipped lithics, representing all stages of the core-redection sequence. Flakes (n=177), primary flakes (n=15, cores (n=6), biface trimming flakes(n=52), core trimming flakes(n=9), utilized flakes(n=11), shatter(n=47), and chipping detritus(n=127) were all identified. In addition, two biface tips were also located, one from the surface and the other eroding from the river bank. Some prehistoric pottery(n=13) was found towards the middle of the site, although the pieces were small and in poor shape. Historic artifacts found during testing included a small number of square nails(n=3), historic ceramics(n=8) and a single pipe bowl fragment. Three animal bones, likely from a small mammal, were also recovered although it is unknown to what

time period they belong. Unfortunately, no evidence of the Middle Woodland and Princess Point components identified by previous researchers could be found.

In February of 1997, Jean-Luc Pilon generously allowed access to Wintemberg's Neuman collection, housed at the Canadian Museum of Civilization. A quick examination of the collection revealed large assemblages of both Princess Point and Middle Woodland rim sherds. In addition, a large collection of incised rim sherds, likely representative of Iroquoian occupation, was evident. The collection also included a wide range of lithic formal tools and bone artifacts. Unfortunately, the material has never been sorted and artifacts from several temporal components are mixed together. Work is currently underway on the Middle Woodland rim sherds from the site and will be reported in greater detail at a further time.

The artifacts recovered from Neuman to date, including previous work by Stothers in 1974 and Wintemberg in 1939, attest tp the multi-component nature of the site. In addition to Middle Woodland and Princess Point components, Iroquoian and Historic components are also present.

HAWTHORN RIDGE

At the Hawthorn Ridge site a large number of lithic artifacts and a small number of pottery sherds, were observed on the surface of the eastern portion of the site. However, most of the site is currently covered by a dense stand of hawthorns. This made artifact collection and testpitting nearly impossible. Hence, no further observations regarding cultural associations can be made at this time. The extreme western edge of the site continues to be plowed on a seasonal basis but very few artifacts were found there.

RESULTS

Due to a very limited budget, field work over the last season has not greatly imporoved our understanding of the Middle Woodland period of the lower Grand Valley. However, initial reserach has begun to determine the types of locales chosen for occupation by Middle Woodland groups. River flats, including areas near wetlands, appear to have been at least one type of preferred location. The significance of wetlands to the Middle Woodland settlement system of the Grand Valley has also been suggested by Archaeological Research Associates(1994). Next season, where funding permits, further testing of Middle Woodland sites will continue.

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ARCHAEOLOGICAL TESTING AT THE WOLF RIVER SITE, THUNDER BAY REGION

JEAN-LUC PILON

In 1995, a promising Laurel site had been found on the Wolf River near Dorion, Ontario, located approximately 1 hour east of Thunder Bay (Figure 1) (Pilon and Ross 1996:9). The locality stood out from others in the area for two significant reason. Firstly, test pit information had indicated that the Laurel component of the site, thinly covered a fairly large area spread out over at least two discreet raised fluvial terraces. The possibility thus seemed to exist for studying discreet and horizontally separated activity areas with little or no overlap between these. A second, important consideration was that the site, in spite of proximity to a town, agricultural areas and the Trans-Canada Highway, did not appear to have suffered any of the destruction that such proximity usually entails. On the other hand, this closeness to the facilities that a town and a highway represent, could be turned to logistical advantage and greatly ease the work of systematic testing and eventually excavation.

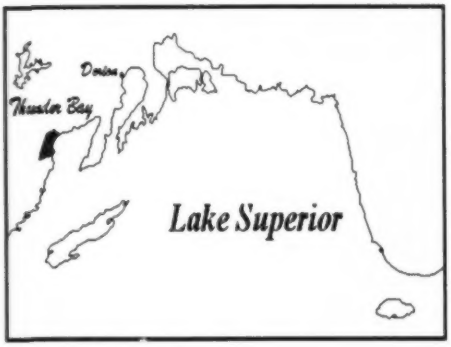

Figure 1. Study area

At the end of July, a crew (Figure 2) consisting of the late Peggi Armstrong, Marian Clark, Thomas Pilon and myself began work with two main objectives in mind. Since the site was spread over a fairly large area, it was thought that by excavating a series of test units at 5 metre intervals, we should be able to

Figure 2. Left to right: Jean-Luc Pilon, Thomas Pilon, Marian Clark and Peggi Armstrong.

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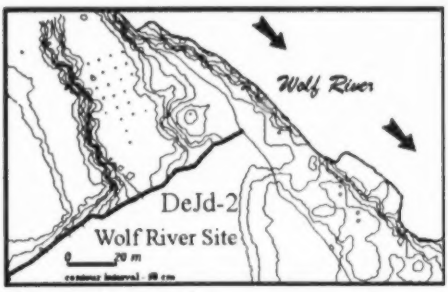

Figure 4. Location of site

identify relatively important activity areas. This information would then be used to plan later work at the site. At the same time, such testing would provide further details on the stratigraphic and cultural observations made in 1995. A second goal was to obtain field data which would then serve to create a working topographic map of the locality. Again, such a map was a necessary tool for planning further excavations at the site.

RESULTS

While we had hoped to test both the first and second raised terraces at the site, the task of surveying the site for a topographic map took valuable time away from excavation and as a result, we were not able to begin any testing of the second raised terrace.

During our brief time at the Wolf River Site (July 27-August 10, 1996), we excavated a total of 23, 50 centimetres x 50 centimetres test units, placed at 5 metre intervals (map 2). Two of these units were subsequently enlarged by the addition of 1 and 3 contiguous 50 centimetres x 50 centimetres units respectively.

The results of this work generally confirmed earlier observations concerning the stratigraphic complexity of the site. Artifacts occured at the base of the duff layer or in the uppermost few centimetres of the underlying, and presumed sterile, yellow sands of the terrace matrix. However, one notable exception was uncovered and was the source of the extension of an initial 50 centimetres x 50 centimetres test unit. The details of this unit are presented below.

In Unit T, a grey stain appeared along

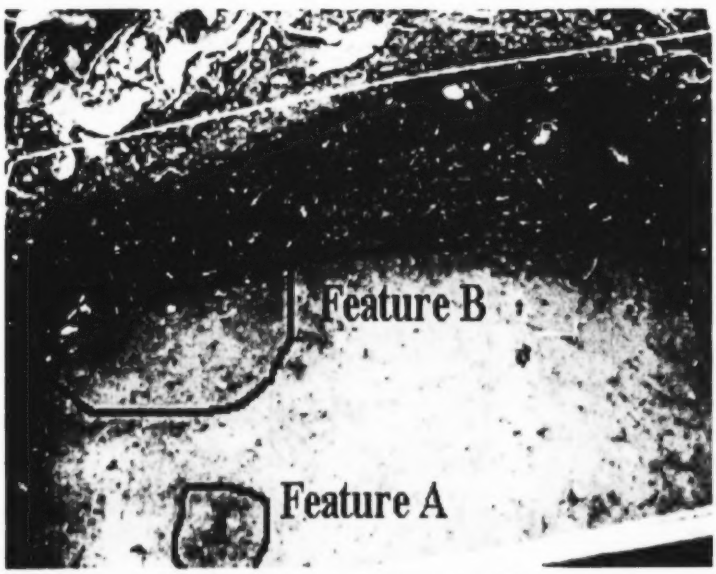

Figure 3. Floor of Unit T showing outlines of Features A and B.

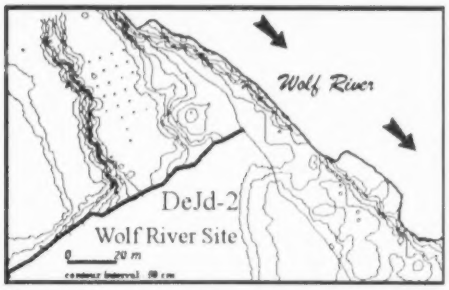

Figure 4. Location of site

identify relatively important activity areas. This information would then be used to plan later work at the site. At the same time, such testing would provide further details on the stratigraphic and cultural observations made in 1995. A second goal was to obtain field data which would then serve to create a working topographic map of the locality. Again, such a map was a necessary tool for planning further excavations at the site.

RESULTS

While we had hoped to test both the first and second raised terraces at the site, the task of surveying the site for a topographic map took valuable time away from excavation and as a result, we were not able to begin any testing of the second raised terrace.

During our brief time at the Wolf River Site (July 27-August 10, 1996), we excavated a total of 23, 50 centimetres x 50 centimetres test units, placed at 5 metre intervals (map 2). Two of these units were subsequently enlarged by the addition of 1 and 3 contiguous 50 centimetres x 50 centimetres units respectively.

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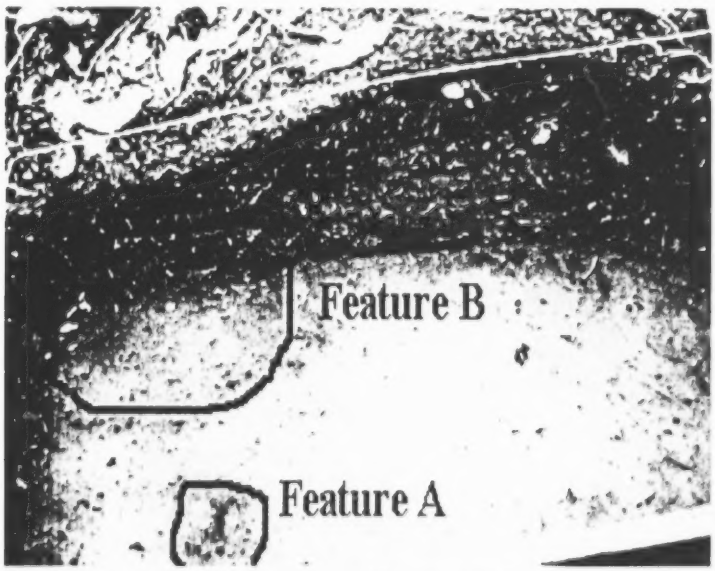

Figure 3. Floor of Unit T showing outlines of Features A and B.

the south wall of the unit. Moreover the discovery of a ceramic rim sherd protruding from this possible feature led to the excavation of an additional 50 centimetres x 50

Figure 6. Chert biface

centimetres unit to the south. In the end, an oval feature (Feature B-nearly 40 centimetres long), possibly a pit, as well as a second stain, possibly a post-mould (Feature A-diameter approximately 15 centimetres),were uncovered.

In sectioning Feature A, it was found

Figure 5. Punctated pseudo-scallop shell over push-pull impressed rim sherds.

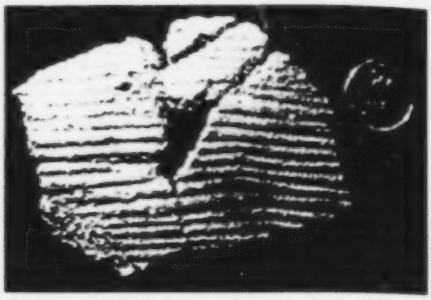

Figure 7. Pseudo-scallop shell or dentate stamp impressed ceramic sherd.

to be at least 26 centimetres deep and cylindrical. Feature B was was more basin-shaped and over 30 centimetres deep. Artifacts were found throughout in both features.

A piece of evidently worked native copper was recovered during the clean-up of Unit T in sands that had been deemed sterile. For the time being this artifact stands alone and could relate to some earlier, poorly-recognized occupation. The only other hint at an earlier occupation on the first raised terrace was found in a test unit near the back of the terrace, i.e. near the base of the slope leading to the next raised terrace. This consisted of 2 jasper taconite flakes.

This raw material had been found in 1996 on the third raised terrace, associated with a jasper taconite biface fragment, and it was postulated that it represents an Archaic period occupation. However, the recovery of these two flakes on the first terrace raises the question of the discreetness of the occupation of this terrace and the discreetness of the postulated early use of jasper taconite. Thus, while the pattern of taconite use by early inhabitants is strong in the Thunder Bay region, we should be more reserved in extending it outside of that area until empirical evidence has been gathered.

In total, the collection consists of 3 biface fragments), 4 unifaces, 54 pieces of debitage, 95 ceramic sherds and 1piece of native copper. The lithic raw materials, with the exception of the two taconite flakes, is comprised of fine-grained cherts. The ceramics are characterized by push-pull, pseudo-scallop shell impressions and smooth surfaces. Punctates were noted on several rim sherds.

While no datable materials were recovered, the ceramics appear consistent with trends noted by Reid and Rajnovich (1991) who have dated the Laurel Superior Complex to within the first millenium A.D.

Plans are currently being formulated to undertake excavations at the Wolf River site during the summer of 1998. At this time, the objective will be to expose a number of activitie areas suggested by the 1996 testing.

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NATIONAL PARKS AND NATIVE SITES ARCHAEOLOGY, DEPARTMENT OF CANADIAN HERITAGE(PARKS CANADA), ONTARIO REGION: THE 1996 FIELD SEASON

BRIAN D. ROSS, CESARE D'ANNIBALE AND KYLA SPENCE

GEORGIAN BAY ISLANDS NATIONAL PARK: KITCHI ARCHAEOLOGICAL SURVEY (13H11, 13)

Permit Holder: Brian D. Ross
[Parks Canada Permit: 96-2H]

The second year of an intensive archaeological survey of the Midland YMCA's summer camp on Beausoleil Island was carried out during a four-week season in May 1996. This work is a continuation of a multi-year programme to manage threatened cultural resources at Camp Kitchikewana. Previous cultural resource management work by Parks, at "Camp Kitchi", has included four excavation seasons to salvage proposed areas of development by the YMCA. In order to systematically ascertain the exact size, limits, nature and configuration of the site beneath the Camp, the shovel-and-pace survey methodology used a 5 metre grid interval over the entire area. The objective was to provide YMCA and Park managers with precise information on the location of cultural resources to be used as a guide in orienting future development at the Camp. As a consequence, any threat to archaeological resources imposed by such development can be avoided or mitigated.

This year's work has completed the coverage of the YMCA camp proper, as well as a few adjacent areas (Fig. 1). Artifact frequencies were found to be particularly high in those areas that already contain existing Camp facilities and which receive the greatest amount of use from Camp operations (such as the area around the Mess Hall). Material recoveries continued to include both historic and Native material. The historic material dates primarily from the 1830s to 1860s and is associated with a known, historic Ojibway village. Visible structural remnants of this village include house depressions and collapsed chimney mounds. Such features were found to extend from the Mess Hall, in the centre of the Camp, out along the high sand ridge facing Treasure Bay, to the southwest. In all, nine building depressions were identified belonging to the 19th century village.

Pre-Contact Native material recovered in 1996 amounted to 1,720 artifacts. Middle Woodland ceramics continue to be the most common artifact type. As in previous collections from the site (Ross and D'Annibale 1994: 4), lithics are represented predominantly by Huronia Pebble chert -- a

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Figure 1. Results of the 1995/1996 Archaeological Survey of Y.M.C.A. Camp Kitchikewana, Georgian Bay Islands National Park (created by B. Fraser based on information from N. Magson).

chert type found in abundance at Camp Kitchi. The main tool type produced from this material is a small thumbnail scraper. Biface production is evident as well; but, given that the pebbles are rarely larger than fist size, their frequency is low. Non-local chert was again represented by Onondaga, Detour, Norwood, Kettle Point, and Upper Mercer cherts. These types accounted for over a quarter of the chert assemblage. Other stone types commonly utilized on site included quartz and slate. Slate was usually chipped to produce unifacial knives.

The southeastern arm of the YMCA camp proved to be one of the poorer areas for artifact recovery. However, in terms of

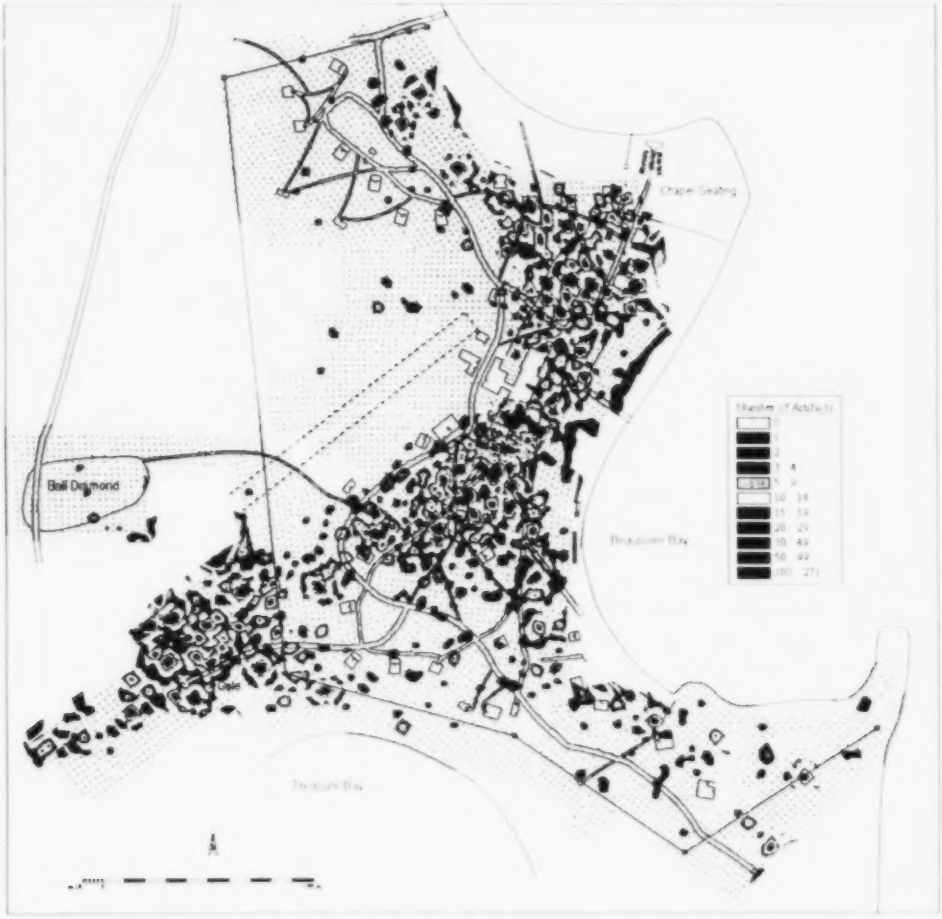

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Figure 2. View of main area at the Marsh Boardwalk visitor facility (site 11H15) Point Pelee National Park, 1996 (photo by B.D. Ross).

settlement patterning it provided insights into the Late Woodland occupation of the site. The observed trend of sporadic Late Woodland encampments along the shoreline of Georgian Bay Islands National Park suggests that this was a common occurrence during this period. Uren/Middleport ceramics were the few artifacts recovered from this area of the Camp. Only one Huron ceramic specimen was found in 1996. Even though the site's location is near Huronia, Iroquoian finds are extremely rare at "Camp Kitchi".

The investigation of the Camp Kitchi site extended beyond the confines of the YMCA camp in order to determine whether the known Middle Woodland occupation represented sporadic campsites or was part of a larger settlement. In this regard, the survey showed that the extent of the pre-Contact Native resources continued without significant interruption along the Treasure Bay sand ridge. This finding continues to confirm the importance of Camp Kitchi as a major Middle Woodland site within the greater Georgian Bay region. So far the Kitchi site covers an area of more than 30 hectares.

POINT PELEE NATIONAL PARK: MARSH BOARDWALK ARCHAEOLOGICAL SURVEY (11H15)

Permit Holder: Brian D. Ross
[Parks Canada Permit 96-3H]

Point Pelee National Park, in Essex County, is a 15 kilometre sand spit formation that consists of 451 hectares of dry land and 1,113 hectares of freshwater marsh. The marsh attracts approximately 75% of the Park's visitors. Unfortunately, the current facilities and infrastructure at the marsh lack coherent layout and are aesthetically inappropriate (Fig. 2). The scope of the park's Area Development Plan was deemed to be potentially damaging to archaeological resources. Consequently, an archaeological survey was initiated, in advance of development, using standard pace-and-shovel methodology, at 3 metre grid intervals.

Although a single human burial has been reported for the area (Dewhirst 1975) and cursory surface examination has located some lithic material, the development area has never been properly investigated. A 1799 survey plan suggests that there may have been a small cluster of Native cabins and corn fields in the vicinity. Plans of the Navy Reserve at Point Pelee Showing Squatter's Holdings, from 1883 and 1889, identify the area's few occupants. By 1968, a Department of Indian Affairs map shows as many as 32 cottages and

out buildings standing on the property. By 1980, virtually all of these buildings had been removed.

In an area measuring approximately 4,000 square metres, a total of 1,306 shovel test pits were excavated. Of these test pits, 40% were productive. The remains of a number of structural floors, foundations, a collapsed chimney, a possible well, and various buried gravel paths or driveways were found, indicating extensive disturbance. Much of the archaeological record, though, has been found to be intact and includes remains dating to 19th century Euro-Canadian and 7th-13th century Aboriginal occupations. Indeed, five nodes of Aboriginal occupation were discovered along the second and third relict beach terraces that produced artifacts from the Late Woodland Western Basin Tradition. These artifacts consist of late Riviere au Vase and early Younge Phase ceramics, a Jack's Reef Corner Notched projectile point, a Levanna Triangular projectile point, and various other tools and lithic debitage.

A total of 1,557 faunal elements were also collected and analysed (Berg 1996). The majority of this material is mammalian (62%) followed by fish (15.2%), reptile (13%), bird (8.9%), amphibian (0.5%) and mollusks (0.4%). Three types of domestic animals (i.e. cow, pig, and chicken) were identified within the assemblage, with both the cow and pig specimens exhibiting butchering marks. A total of 157 elements -- representing muskrat, pig, turtle, bird and unidentified carnivore species -- showed signs of some degree of heat alteration. A complete right otolith from a freshwater drumfish appears to have been polished.

Only about one-half of the total area to be affected by the Marsh Boardwalk Area Development Plan has now been archaeologically tested. Plans to proceed with development faltered in 1997 and, so, the completion of the archaeological survey has had to be postponed until 1998.

PUKASKWA NATIONAL PARK: PIT SITE RECORDING AND INSPECTION (28H)

Permit Holder: Brian D. Ross
[Parks Canada Permit 96-4H]

Six known "Pukaskwa pit" (petroform) sites were revisited during the 1996 field season; while three historic sites were fully recorded and one new cobble beach was discovered and explored. This year, the project also experimented with a unique technique of dating these enigmatic stone features.

The Top of Richardson Island site (28H33) consists of four large cairns high on a hill overlooking Lake Superior (Fig. 3). The tallest cairn (at slightly more than 2 metres) is thought to have been constructed near the turn of this century to serve as a landmark for the commercial fishing fleet. The others are likely more recent. The isolated Deep Harbour site (28H85) was relocated and three additional features were found there. The central feature is a large rectangular floor. There are also two cache pits, an undetermined oval pit feature, a hearth, and a second floor feature. This second floor is raised and bifurcated.

A close examination of the Tagouche Creek site (28H30) has refuted the original identification of cultural features. However, three other features (including a floor, a low cairn, and a simple walled, oval pit) were discovered. The newly discovered North Tagouche site (28H53) is extremely small, consisting of only two small, simple round pits. A re-examination of the very first reported Pukaskwa pit site -- the North Richardson

Figure 3. The fishing fleet beacon and smaller cairn overlooking Lake Superior from the Top of Richardson Island site (28H33), Pukaskwa National Park, 1996 (photo by B.D. Ross).

Harbour site (28H18), discovered by Colin McMillan in 1949 -- revealed yet another new feature. This time, a solitary, well-defined cache pit was found 32 metres away from the other six features.

The Buchanan Creek site (28H29) consists of six features aligned along the edge of the third beach terrace. Besides a large round floor, a smaller floor feature, and a distinct oval pit, the most intriguing aspect of this site is a series of three, large, articulated, rectangular floors (Fig. 4). Averaging ~4.5 metres wide, the combined living space is more than 16.0 metres long. Of extreme importance has been the discovery of artifacts in one of these structures. This discovery included a Hudson Bay Lowland chert flake that appears to have been utilized as a combination scraper/graver. Three small pieces of Native ceramics, one corded body sherd, and two rim sherds were also collected. The identifiable ceramics suggest a Terminal Woodland age and resemble the Middleport-style vessel found at Willow Creek in 1986. Also, a single specimen of a burnt and butchered caribou bone was retrieved. It is evident that this is a small settlement that could have accommodated at least three nuclear families.

The three historic sites recorded this year all occur on Otter Cove. Two of these are mid-20th century "camps", complete with cabins, gas/tool sheds, boat houses, and privies. Of note, the Holly site (28H82) has a semi-subterranean ice house; while the neighbouring Pettinga site (28H84) has a water tower. The Weideman site (28H83) is the oldest of the three properties, dating to ca. 1925, and served as a trapper's cabin. There is evidence, though, that the site may have been used earlier as a small logging depot.

The experiment on dating petroform features (Betts 1996) was quite successful. Two sites were selected, Swallow Bay (28H64) and North Byron II (28H58). The premise behind the experiment was that weathering affects the surface hardness of exposed rocks and that this hardness can be measured and used to determine the length of time during which a rock has been exposed to the elements. The instrument used to take these measurements is called a "Schmidt hammer" and it records the rebound distance of the hammer mass after it has impacted upon a sample with a known amount of energy. Softer, weathered rocks will have low rebound values, while harder, pristine rocks will have high values.

The hammer was applied against common beach cobble stones from the various relict terraces as well as against constituent cobbles within petroform features. The results

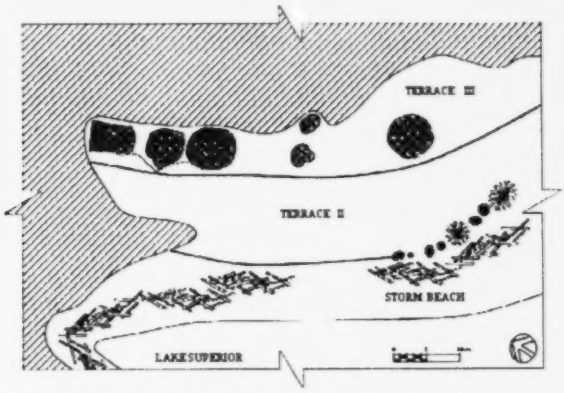

Figure 4. Site plan of the Buchanan Creek site (28H29), 1996 (drawing by J.P. Jerome).

showed that the common beach stones in the uppermost terraces were the softest and that hardness increased down slope thus demonstrating that as lake levels dropped after the last glaciation, successively lower cobble beach terraces were exposed. The long held belief that the age of the petroforms corresponded to that of the terraces upon which they occurred was discredited by the recording of generally inverse values. In other words, harder (and therefore younger) values were often recorded for features on the highest (and oldest) terraces, while softer (older) values were obtained from lower (younger) beaches. The experiment was also able to show that site development was not continuous; but rather that petroform construction occurred in phases.

By correlating the hardness values of the cobbles, features and terraces to the known ages of Pukaskwa's strandlines, it is possible to estimate the date of construction of the Pukaskwa pits. It is therefore suggested that the earliest petroform construction phase at the test sites occurred approximately 1000 B.P., followed by another flourish of petroform construction 500 years later. It would appear, then, that Pukaskwa pits are a phenomena of the Woodland Period. Although extremely early constructions may date to the last stages of Laurel occupation, the majority of features (at least from the test sites) seem to be attributable to the Blackduck peoples.

TRENT-SEVERN WATERWAY: HEALEY FALLS ARCHAEOLOGICAL SALVAGE (45H19)

Permit Holder: Brian D. Ross
[Parks Canada Permit 96-13H]

The first year of a long-term archaeological salvage excavation of the Healey Falls site, on the Trent-Severn Waterway, was undertaken during a four-week season in August 1996. The site is located immediately below a water control dam on the Trent River in Northumberland County. This situation results in yearly flooding from the release of water to maintain adjacent lake and river levels. Although cultural material is scattered over a large area(Figure 5), previous survey work by Parks, in 1995 (Ross and D'Annibale 1996a), identified an area of undisturbed site remains on a raised beach terrace above the river. The current excavation strategy focused on salvaging the slope leading up to the intact

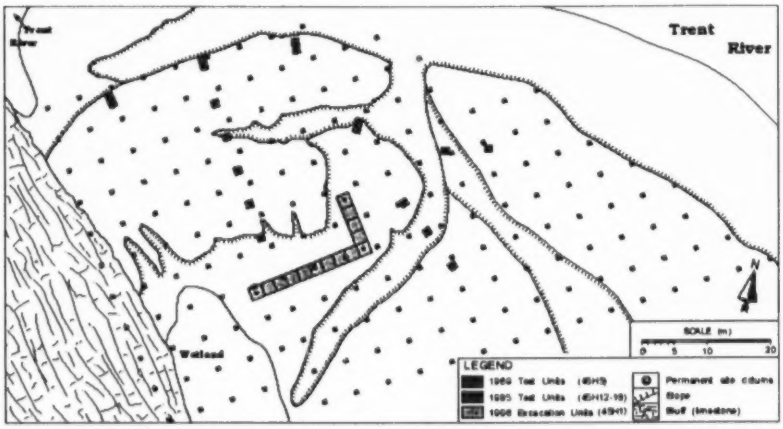

Figure 5. Extent of subsurface explorations made by Parks Canada at Healey Falls, 1989-1996 (drawing by R. Farvacque, based on map by C. D'Annibale).

higher site component.

Excavation in 1996 consisted of fourteen two-metre square units along the southeastern side of the site. The disturbance created by the 20th century flooding events has completely mixed the cultural material to a depth of between 0.3 and 0.5 metres below surface (Farvacque and Ross 1997:15-22). The 1996 excavation did identify one large pit feature sealed by a series of flooding events. This 2 metre wide, circular, basin shaped feature reached a depth of 0.6 metres. Recovered Native ceramic material suggests that this feature dates to sometime in the Woodland Period.

Despite the lack of useful stratigraphy, evidence for the importance of this site can nevertheless be ascertained. With finds ranging from the Early Archaic to the early 20th century, the major phases of occupation at Healey Falls date to the Late Archaic, Early Woodland, and Middle Woodland periods. Among the most notable finds of the 1996 excavation was the recovery of steatite bowl fragments. This artifact type is extremely rare in the Ontario archaeological record. Its presence adds to the importance of Healey Falls as a transitional site from the Late Archaic to Early Woodland. Occupation of the site during the Middle Woodland is restricted to the early and middle phases of this Period. Some 50 vessels have been identified to date. Evidence for a Late Woodland presence, on the other hand, is restricted to a few projectile points, suggesting a more casual and transitory use of the site. A surprising component beginning to be identified at the site is an 18th century Euro-Canadian presence. It seems likely that the use of the site as a portage was associated with the fur trade, as well.

Healey Falls appears to have served as a strategic location along the Trent River system. Not only important as a portage, it was also used as a major stopover point for the manufacture and repair of stone tools. Exotic lithic material found on the site, such as Onondaga, Kettle Point, and Flint Ridge cherts, are represented by broken projectile points, drills and bifaces. However, the chipped stone assemblage is dominated by local materials, primarily quartz and Iron

Formation quartzite for the production of points and other tools, and chlorite schist for the manufacture of axes (Figure 6). Evidence that the Healey Falls site served as an axe manufacturing centre continued to be discovered. More axe preforms/blanks were recovered, as well as the associated debitage from the reduction process, indicating that the complete process from cobble reduction to final product is present on site.

Of regional importance is the presence on site of Iron Formation quartzite. The source for this raw material has not yet been identified; but, given the abundance of cores, debitage, and tools on site, it must be in the vicinity. Although the distribution of this raw material is also unknown, its predominance within the assemblage suggests that the Healey Falls site was nodal within the region for the extraction and reduction of Iron Formation quartzite .

Specialized studies have been carried out on the faunal (Berg 1997) and archeobotanical (Bowyer 1997a) material to identify patterns of subsistence and seasonality. The archaeological plant remains, consisting of wood charcoal, nut remains, and carbonized seeds, have provided ecological data that confirm the use of certain plant varieties for the Late Archaic and Woodland Periods. These reflect the present day natural abundance of these plant types in the local forests. Maple and other hardwoods constitute the largest fuel group by far. Subsistence data is provided by the presence of hickory and walnut/butternut fragments and the occasional occurrences of seeds from elderberry, sumac, and dogwood. Generally, these findings corroborate botanical information recovered from other sites in the Rice Lake area. Faunal material is represented by 3,276 fragments, of which 586 were heat altered. Mammal remains accounted for 93% of the sample. The identifiable species included white tailed deer, elk, moose, beaver, muskrat, and black bear. Eight items show evidence of having been worked, including two bear bone bead preforms and two awl fragments.

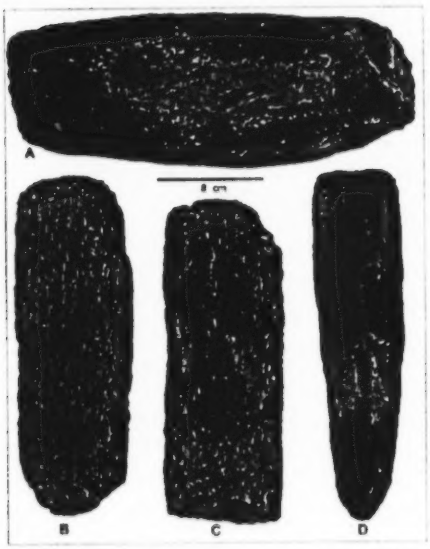

Figure 6. Adze / axe preforms from Healey Falls (photo composite by R. Farvacque using photos by R. Chan).

Despite the obvious damage to the Healey Falls site, the results of this year's archaeological excavations have proven that the site contains rich and significant cultural deposits. There is even evidence to suggest that intact subsurface features are likely to be found beneath the redeposited erosional gravels that blanket much of the site. Continued archaeological salvage will focus on recovering cultural material from the low lying areas of the site that are most affected by the erosion.

NIAGARA NATIONAL HISTORIC SITES: NAVY ISLAND ARCHAEOLOGICAL MITIGATION (49H168)

Permit Holder: Brian D. Ross

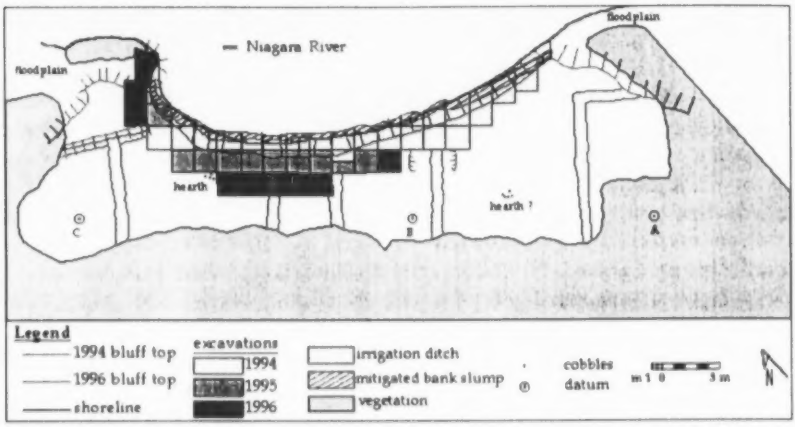

Figure 7. Site plan showing the extent of archaeological excavations from 1994-1996 at the Parker Homestead site on Navy Island, Niagara National Historic Sites (drawing by R. Farvacque).

[Parks Canada Permit 96-14H]

During four weeks in September 1996, salvage excavations were continued at the Parker Homestead site on Navy Island. As in previous years (see Ross and D'Annibale 1995 and 1996b), the primary objective was to keep ahead of the uncontrollable shoreline erosion that continues to endanger archaeological resources. Ten new units, amounting to 36 square metres, were excavated in those areas of the site most threatened by erosion (Figure 7).

The Thomas Parker homestead was occupied between the mid 1840s and early 1870s, and it is this time period that is represented by the majority of the artifact assemblage. To date, the only evidence of extant structural remains of this homestead is provided by a large post-1850 root cellar. In addition, several rectilinear 'pit' features, also dating to the mid-nineteenth century but of uncertain function, have been discovered. This season's excavations continued to produce a small amount of mid-eighteenth century French and English material, constituting the earliest European artifacts recovered from the site.

The dominant Native occupation of this site dates to the Late Archaic/Early Woodland period. Archaeobotanical analysis of plant remains collected from features of this age suggests that the site was occupied at least during the late spring/early summer as well as the late summer/early autumn (Bowyer 1997b:27). Evidence of chipped stone tool manufacture continues to be well represented for the Late Archaic/Early Woodland period. Excavations in 1996 recovered more stemmed projectile points and biface fragments dating to this phase of occupation, as well as lithic debitage (almost exclusively of Onondaga chert) from all stages of the reduction process.

One of the most interesting features excavated during this season was an oval pit, measuring approximately 1.7 metres at its greatest width, and at least 0.55 metres deep (Figure 8). Evidence of charred wood indicates that it was lined with cut branches placed vertically around the periphery. The material found within this feature includes burnt and unburnt bone, Onondaga chert debitage, fire-cracked rock, and carbonized

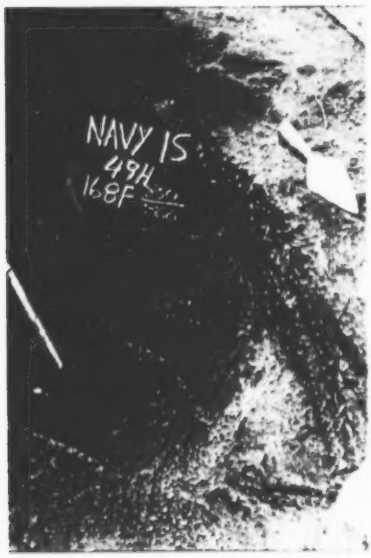

Figure 8. View of sectioned pit feature radiocarbon dated to 270 ± 85 B.P. from the Parker Homestead site, Navy Island, Niagara National Historic Sites (photo by B. Ross).

remains of bramble recovered through flotation (Bowyer 1997b:25). Although this pit contained no culturally diagnostic artifacts, the radiocarbon dated age of 270±85 B.P. (BGS 1920) indicates a possible Neutral presence on the site. This phase of occupation -- indeed the entire Late Woodland Period -- is represented by only a few artifacts in the assemblage. This general paucity suggests that site use during this Period was quite minimal and transitory.

The designation of Navy Island as nationally significant by the Historic Sites and Monuments Board of Canada dictates that the cultural resources on the island be given our highest consideration for protection and preservation. As erosional factors remain a threat to the Parker Homestead site, continued archaeological salvage work is required.

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POSSIBLE ECOLOGICAL FACTORS AFFECTING EARLY PALEO-INDIAN PROCUREMENT STRATEGIES OF FOSSIL HILL CHERT IN SOUTHERN ONTARIO

PETER L. STORCK, P.J.BARNETT, L.D.DELORME, S.G.MONCKTON, J.TOMENCHUK AND P.H. VON BITTER

The Red Wing Project is a multidisciplinary effort to determine how Early Paleo-Indian procurement of Fossil Hill Formation chert in the Kolapore Uplands of southern Ontario was integrated into the annual cycle of subsistence and land-use. At the beginning of fieldwork, the initial hypothesis was that an upland food resource (possibly spawning fish) may have led to the discovery and long-term use of the chert. However, paleoecological studies indicate that this may not be the case. Instead, use-wear analyses of wood-working adzes and other tools suggest that, in addition to the chert, the Kolapore Uplands may have been a source of wood grown under conditions of environmental stress, and thus desired by Early Paleo-Indians because of its hardness for use as spear shafts, handles and other components of the toolkit.

In 1996, the second, and final, season of field work was conducted at the Red Wing site, located in the geological source area of Fossil Hill Formation chert in the Kolapore Uplands in the southern Georgian Bay region (see, also, Storck 1997b)

The research at Red Wing is concerned broadly with strategies underlying the Early Paleo-Indian procurement of toolstone. The prevailing view in North America is that Early Paleo-Indians required high quality stone for technically sophisticated tools and to provide for a flexible toolkit under conditions of high mobility. Because of this, it is often assumed that Early Paleo-Indian movements across the landscape were determined in large part by the locations of high quality stone sources. The technological argument is certainly compelling. Unfortunately, archaeologists have devoted far less attention to investigating other factors that may also have influenced Paleo-Indian toolstone procurement. The research at Red Wing is concerned with determining whether ecological considerations may also have played a role in toolstone procurement.

Fossil Hill chert was preferred by Early Paleo-Indians of the Parkhill complex and forms 90-95% of the tools and debitage on sites located at distances up to 200 kilometres from the geological source. This shallow drop-off rate in the use of this material over such long distances suggests that the chert was obtained directly from the source area by the north-south movement of people. This movement was almost certainly seasonal in nature, considering the fact that the geologic source area of the chert occurs in an upland region which today is also a prominent snow

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belt. This snowbelt would probably have been larger, and persisted longer, during the late glacial, requiring chert procurement during the snow-free seasons of the year. It is also noteworthy that Fossil Hill chert was preferred over other types of toolstone, such as Onondaga chert from the north shore of the Erie basin and Kettle Point chert from the southeast shore of the Huron basin. Since all three cherts would presumably have been equally accessible and are of comparable quality, the preference for Fossil Hill chert suggests that toolstone procurement was governed by ecological as well as technological considerations.

An opportunity for studying this hypothesis was suggested in 1994 with the discovery of the Red Wing site. Unlike other sites previously investigated in the source area of Fossil Hill chert, Red Wing occurs in a low-lying area adjacent to a marsh. At the time of discovery, it was speculated that the marsh may have been a small pond during late glacial times. This possibility was particularly interesting because of another discovery made several years earlier at a Parkhill complex site which occurs 30 kilometres to the east on the margin of a former lagoon of glacial Lake Algonquin (Storck 1997a). At that site, use-wear evidence indicates that some tools were used in filleting fish, presumably obtained from the lagoon. Thus, the physical setting of the Red Wing site suggested a testable hypothesis: that Early Paleo-Indian peoples may have discovered Fossil Hill chert by following fish upstream from glacial Lake Algonquin to spawning areas in the headwaters region flanking the geological source of the chert. Theoretically, these spawning areas might have provided a seasonally abundant resource that would explain the preference for Fossil Hill chert over other types of toolstone of comparable quality. This hypothesis, having to do specifically with fish, also served as a way of looking for other possible biological attractions that may have led to the discovery and long-term use of Fossil Hill chert.

Because of the ecological questions, research at Red Wing has involved Pleistocene and bedrock geology (Barnett and von Bitter, respectively), palynology (Monckton), and other paleoecological studies (Delorme). In addition, tool-use experiments and use-wear analysis of the tool assemblage (Tomenchuk) is playing a role of special importance. The work is financially supported by a three-year grant to Storck from the Social Sciences and Humanities Research Council of Canada and yearly funds (also to Storck) from the ROM Foundation.

Our studies of the Pleistocene sediments indicate that the depression, within which the Red Wing site and present-day marsh are located, was formed after 13,000 years ago by a still-stand of ice during final glacial retreat. This deposited a morainic ridge a short distance west of an escarpment formed by the Fossil Hill Formation. The gap between the moraine and the escarpment was flooded by meltwater which, at first, drained to the north and, later, with erosion of a sill in the moraine, to the west. The interval during which this ice-contact lake existed is also recorded at the base of a sediment core (Unit I) lifted from the present-day marsh adjacent to the site. Sediments in an overlying stratigraphic unit (Unit II) document an environmental record covering the latter part of the late glacial period, extending from approximately 10,170 ± 90 to 11,600 yrs. B.P. (TO-5784 and 5785, respectively). During that period, the alternating layers of silts, sands and clays, with varying amounts of organic material, indicate the present-day

marsh basin contained fluctuating water levels of varying depths.

The late glacial age of Unit II is supported by pollen studies from cores taken from the Red Wing marsh. Paleobotanical data indicate that the sediments in Unit II were deposited during pollen zone I in the Great Lakes region, the so-called spruce pollen zone. The vegetation included spruce, sedges and arctic avens (*Dryas integrefolia*), a small shrub that grows today under treeless conditions in the arctic . The small number of spruce macrofossils, the high frequency of sedges and the presence of arctic avens all indicate the vegetation consisted of very sparse trees (probably only in sheltered locations) in a tundra-parkland environment.

In 1995, widespread archaeological excavations at Red Wing produced the expected flintknapping debris associated with toolstone procurement at a geological source: blocky fragments of chert, cores and the broken bifaces and debitage of blank production. Clearly, a major activity at the site involved the manufacture of blanks for transport and use elsewhere as raw material for tools. Evidence of this activity is ubiquitous. Similarly, the few shaped tools and debitage used as tools are also

Figure 1. Wood working adze from Red Wing site (catalogue number 994.76.277). Second from top schematic drawing and adjacent photograph (obverse face). Bottom schematic, (reverse face)longitudinal section; edge shown in heavy black line. Top schematic (cross section). Large hinge fracture at top of artifact on obverse face apparently resulted from a bending break and the accidental removal of the cutting edge (bit) of the adze through use.

distributed widely, presumably the result of opportunistic tool-making and tool-use activities across the site.

In 1996, our excavations uncovered and defined a small area that produced a diverse collection of tools, many of exotic cherts, which were probably used in rearming weapons and for the repair of organic parts of tools. Many of the stone tools, such as the gravers, beaked scrapers, the tip of a fluted point and a late stage unfluted preform, are clearly Paleo-Indian in affiliation. Several technological and metric attributes of the point tip and the preform are more similar to the Barnes-type point than other Early Paleo-Indian point types in southern Ontario and, therefore, suggest an occupation by Parkhill complex peoples.

Morphological and use-wear analysis has identified at least six examples of a new tool type not previously reported from Early Paleo-Indian complexes in the Great Lakes region: a flaked stone adze (Figure 1). The characteristics of the polish (both the depth of penetration into the worked substance and the brightness of the polish) indicate the tool was used in working wood. The orientation of polish development (consistently on the upper margin and same aspect of facial flake scars), as well as wear patterns from hafting, indicate a use-motion parallel to the long axis of the tool; hence the interpretation that the tools were used as adzes. The closest typological analogue is with the Late Paleo-Indian Dalton adze in the southeastern United States (Gaertner 1994; Goodyear 1974; Morse 1997). However, unlike Dalton specimens, which were shaped in part by grinding, the Red Wing examples were shaped exclusively by knapping. Unfortunately, the possible association of the Red Wing adzes with a Parkhill complex toolkit must remain ambiguous because the adzes were not tightly associated with other diagnostic tools (in undisturbed contexts) or found in dated deposits.

The archaeological and paleoecological data just briefly summarized do not, unfortunately, support the original hypothesis that Early Paleo-Indian peoples may have been attracted to the Fossil Hill chert source because of an interest in fishing. Geological studies indicate that the pond adjacent to the site was probably too shallow to support fish. In addition, the pond sediments produced no fish bone or organisms fish may have depended upon for food. Thus, use-wear analysis may provide the only way of determining whether biological resources specific to the site locale, or upland region generally, may have caused people to focus on the Fossil Hill chert. To this end, Tomenchuk is attempting to identify the tree species which created the wood polish seen on the adzes and many other tool types. This will be done using an analytical approach capable of identifying wood hardness. Once the identities of the tree species are known, an understanding of their hardness ranges under different growth conditions may tell us whether the Kolapore uplands was a potential source of especially hard wood, grown under marginal conditions, and, secondly, whether the harvesting of this wood-- for use as handles, spear shafts and other tools-- may have played a role in the discovery and long-term use of Fossil Hill chert as a toolstone.

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UNDERWATER SURVEYS

SUBMERGED PREHISTORIC SHORELINE STUDY - GEORGIAN BAY

SCARLETT E. JANUSAS, A. AMOS, S.BLASCO, AND S. MCCLELLAN

The Submerged Prehistoric Shoreline study was initiated in 1993, and the 1996 licence covers the results of the fourth year of this long-term investigation. The former assessment area of Bad Neighbour Rock, Yeo Island and Lucas Island has been expanded to include portions of Fathom Five National Marine Park (Figure 1).

The project has changed over time, expanding its focus to include a determination of glacial activity, uplift, prehistoric lake levels, submerged forests and prehistoric cultural potential. It has also included a co-operative arrangement between the Ontario Marine Heritage Committee, the Geological Survey of Canada, Atlantic Geoscience Centre and Parks Canada, Fathom Five National Marine Park.

The 1996 field season was an exciting one, including the cooperation from the Canadian Navy and its use of a sub-launch and manned submersible (SDL-1).

FIELD SEASON RESULTS

Additional bathymetric data was collected in preparation for underwater observation. A total of five additional bathymetric profiles metres and is approximately 74 metres at its deepest point.were taken in the Lucas Channel area. The channel appears at a depth of approximately 60 metres and is approximately 74 metres at its deepest point. The incised bedrock channel appears well developed, similar to those indicated in previous seasons records. At Middle Island additional bathymetric profiles were taken in 1995 and these were augmented by the addition of 1996 side scan sonar record and bathymetric profiles. The side scan sonar record of a portion of the Middle Island spillway shows large current bedforms at the base of the channel.

The HMCS CORMORANT, planning another Great Lakes working cruise, responded to our request for assistance with our project. The HMCS CORMORANT is the Canadian Navy's Diving Support Vessel, whose primary mission is diver and submersible activities. The SDL-1 (manned submersible) is equipped with an articulated arm capable of collecting short sediment push cores as well as picking up other small samples, and video and still photographic capabilities (Figure 2). Five submersible dives were conducted within the project study limits. The first dive was conducted in the vicinity of the Lucas Channel to investigate the characteristics of the Lucas Channel as a significant waterfall or rapids which operated 5000 to 10,000 years ago. This dive confirmed that a second spillway (the first spillway was located in 1994 near Middle

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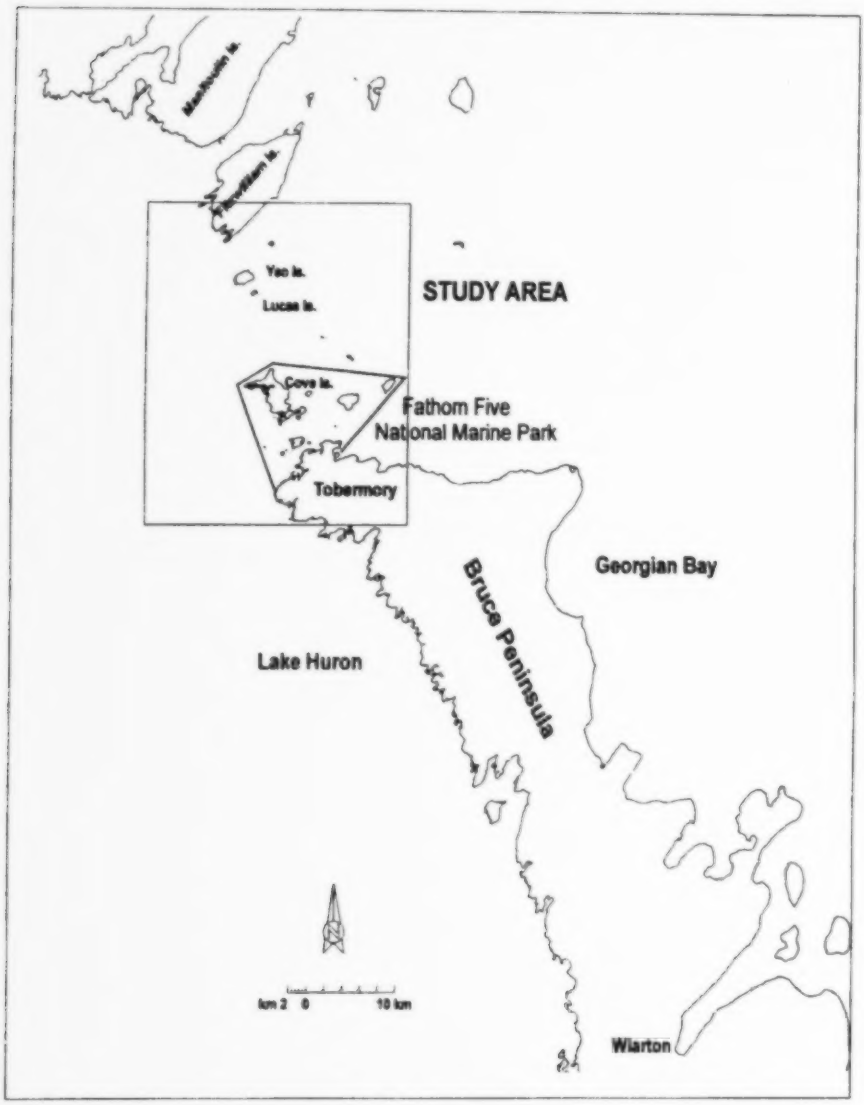


Figure 1.
Location Map: Study area.

Island) occurs at the north end of the Lucas Channel. Figure 3 depicts the Middle Island spillway. Known lake level history would indicate the Lucas Channel spillway is less than 10,000 years old. This spillway supports the possibility that a watershed as far west as Lake Winnipeg once drained through this part of the study area, en route to the Atlantic Ocean. The spillway is a giant rapid, with an approximate equal drop in elevation the same as present day Niagara Falls, but with a more gradual slope. The same is true for the Middle Island spillway. The second submersible dive was also located in the area of the Lucas Channel and its objectives were to investigate the nature of the abandoned river channel and to search for evidence of aboriginal occupation on the river banks. While no cultural material was observed, the crevices have the potential to harbour prehistoric stone tools. The third submersible dive, again in Lucas Channel, but on the outer end of the spillway, was to investigate drainage patterns in the deep water at the north end of the Lucas Channel and make observations and to collect two or three core samples from the bottom features. The bottom contained a number of parallel ridges oriented generally in an east-west direction. The ridges were approximately one to two metres in height and between two and five metres in width. Spacing between ridges was approximately 15 metres, and the ridges were composed of pebbles and coarse sands overlying a clay core. The fourth dive was made in an area south and west of Bad Neighbour Rock which may have been a prehistoric deep water lake, capable of supporting trout and other fish species, as well as shoreline animal and plant resources. On the west side of the prehistoric lake, the scientific team came across a three metre drop which may indicate the presence of an inlet/outlet channel. At 43.2 metres, an *in situ* tree stump was observed and sampled. The fifth dive was conducted on the site of the wreck ARABIA to investigate bottom sediment processes active on the crest of the submerged Niagara escarpment and to document the morphological changes in the character of the bedrock pop-up along its axis. The sixth dive was conducted in the Middle Island channel spillway to observe the bottom conditions and general layout of the spillway structure. The spillway was not well defined where it was crossed during this dive, exhibiting a gradually sloping bottom. The seventh dive was conducted on the east side of Cove Island at the location of a side-scan target, possibly an unknown shipwreck site. Nothing was located to confirm a shipwreck site.

Figure 2. SDL-1 aboard the HMCS Cormorant

The side scan sonar investigations with

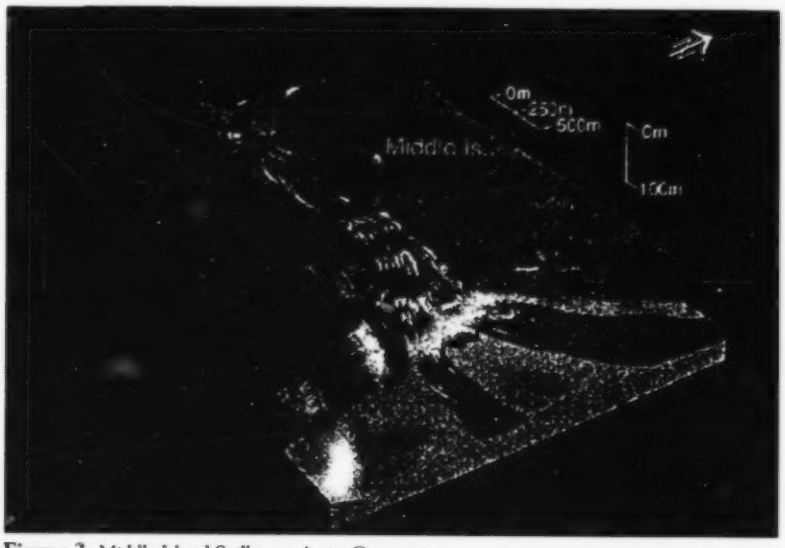


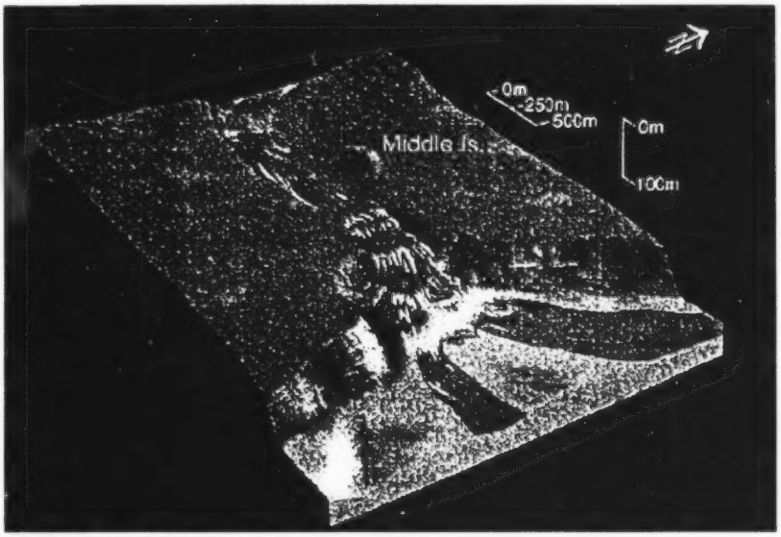
Figure 3. Middle Island Spillway - Artist Conception

corresponding bathymetric profiles will assist in defining the morphology of the channels and help to generate the paleoshorelines.

All SCUBA dive investigations failed to confirm any additional submerged forest.

ASSESSMENT AND INTERPRETATION

The first submersible dive identified four potential possibilities for archaeological evidence. The first is that rapids such as those found in a spillway were often an attractive resource exploitation area for fishing. The second, such as the upper reaches of the plateau, have been previously documented as exhibiting high potential for site location. The lower reaches of the channel, which had a split into two areas would also have been an attractive area of encampments on either side as well as between the two reaches. The third factor is that animal crossings, such as those by caribou, would have be influenced in the location of crossing. The fourth factor and linked closely with these caribou crossing, are the hunting techniques used by man. Caribou were often hunted while in the water, especially if they were still in their winter coats. The second submersible dive noted that the size of the stones and cobbles suggest the potential for survival of stone artifacts of similar dimensions. The third dive confirmed bedform formations (large ripple wave patterns) and the short-core sediment analysis will assist in confirming age control and stratigraphic data in relationship to the lakebed history. The fourth dive, in addition to the *in situ* tree remnant recovery, retrieved several historic artifacts strewn in a linear fashion along a portion of the path of the submersible dive. This general location closely approximates the route used by the Tobermory -South Baymouth ferry since the mid-1930's. This area is also within the general route of the main shipping channel



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connecting Georgian Bay and Lake Huron. The *in situ* tree is Eastern White Cedar and the carbon 14 dates placed the tree at 9360 +\- 80 years B.P. This date makes this particular tree the oldest of all of the *in situ* trees recovered and dated in this study. The fifth dive provided a positive means of confirming the size, extent and possible age of the large "pop-up" feature noted from earlier side scan records. The sixth dive provided the first opportunity for a direct observation and confirmation of some of the suspected features and conditions. The Middle Island spillway is relatively clean swept. The last dive was unable to confirm the location of a suspected shipwreck.

GRANTS

PRESERVE OUR WRECKS(KINGSTON): PHOTO PROJECT 1996

JONATHAN MOORE

The Preserve Our Wrecks (P.O.W.) Photo Project was initiated in 1995 to collect and archive photographs and Hi-8 video of Kingston area submerged archaeological sites being covered by zebra mussels (*Dreissena polymorpha*) and quagga mussels (*Dreissena bugensis*) (Moore 1997a). Photographs were culled then copied from existing collections, principally the private collections of sport divers. Many of these photographs had been taken in the "pre-mussel" era, and most are of a high quality. But since there were significant gaps in the coverage of these collections, fieldwork was begun to photographically recording those sites not usually visited by sport-diving photographers. The project fieldwork was completed in 1996, and the final report summarizes the results of both the 1995 and 1996 fieldwork seasons (Moore 1997b).

The following number of images were collected and catalogued: 184 prints; 1,102 colour slides; 679 Hi-8 video stills; and twelve hours of Hi-8 video. In 1996 an archaeological inventory survey was conducted in the Back Bay, Garden Island, where a marine graveyard holding at least twenty-three vessels is situated. Table 1 summarizes the sites targeted for photographic recording and for the collection of existing photographs. Two sets of the P.O.W. Photo Project Collection have been created, and will be archived at the Marine Museum of the Great Lakes at Kingston, and the office of the Ontario Marine Heritage Conservation Program.

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GARDEN ISLAND MARINE GRAVEYARD

Garden Island, situated three kilometres south of Kingston in the St. Lawrence River, was the site of a diversified timber forwarding, shipbuilding, and towing and salvage enterprise during the nineteenth and early twentieth centuries. The enterprise was dominated by the Calvin Company, and the backbone of the business was timber forwarding: "sticks" of timber were collected from around the Great Lakes and brought to Garden Island by the company's fleet of schooners, which was later replaced by a fleet of steamers which towed barges. The majority of the sailing and steam vessels employed by the Calvin Company were built on Garden Island.

Marine activity at Garden Island was concentrated in the "Back Bay", ideally situated on the east side of the island, since it is protected from the prevailing southwest winds. Huge rafts of the collected timber sticks were assembled there, prior to their transport down the St. Lawrence River to

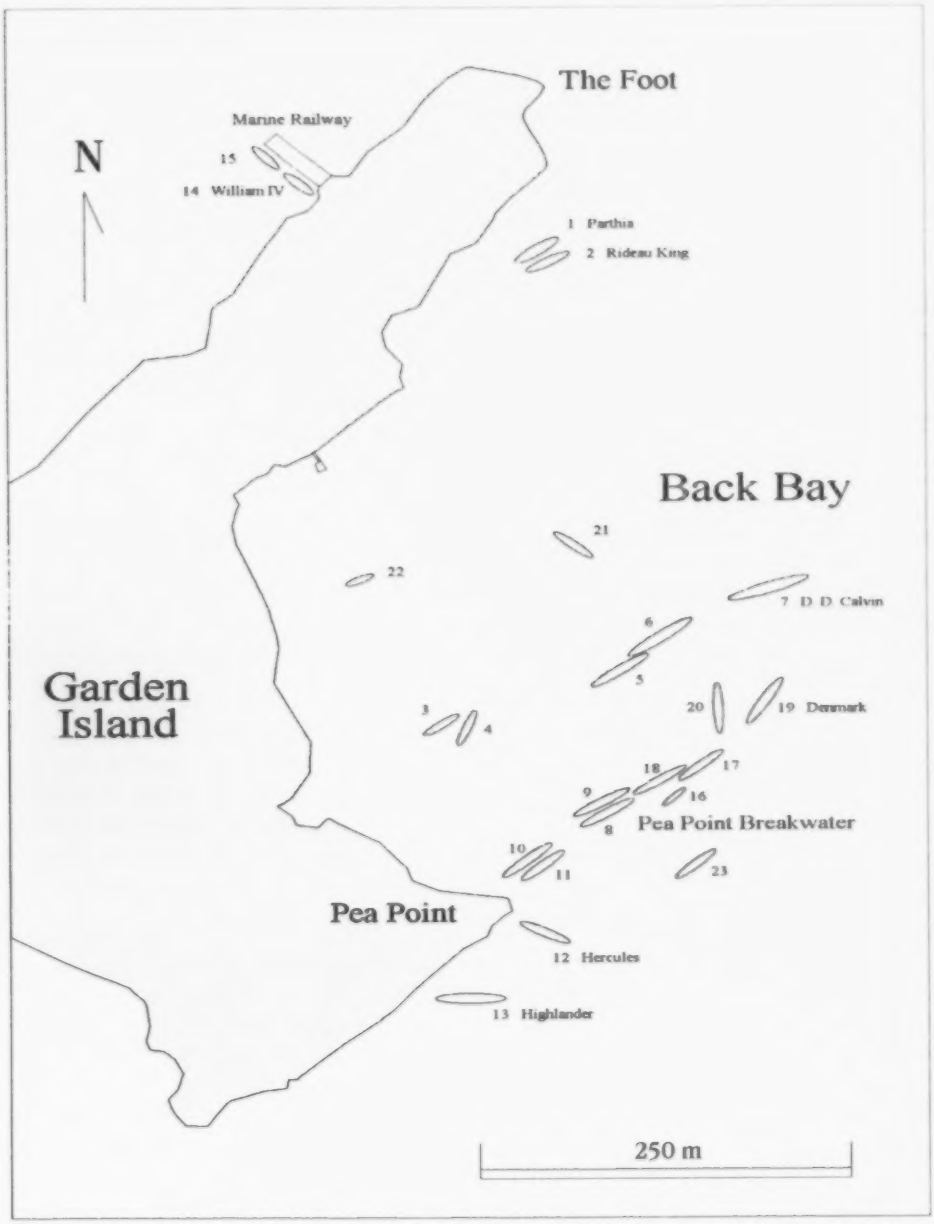

Figure 1. Map showing the positions of vessel remains in the Back Bay, Garden Island, 1996. The outline of each vessel has been sketched, but the length of extant remains is drawn to scale. Map by Jonathan Moore.

Table 1. Selected archaeological sites recorded during the P.O.W. Photo Project. Not all of the Garden Island Graveyard sites have been listed.

Site Identity	Possible Identity	Borden #	Date Built	Vessel Type
Aloha		BaGd-4	1888	Schooner-barge
Annie Falconer		AlGe-1	1867	Schooner
City of Sheboygan		BaGe-3	1871	Schooner
Comet		BaGd-5	1848	Paddle steamer
Cornwall		BaGd-6	1854	Paddle steamer
Deadman Bay Graveyard				
Deadman Bay 1	H.M.S. *Kingston*	BbGc-45	1814	Warship
Deadman Bay 2		BbGc-46		Warship
Garden Island Graveyard				
Garden Island 1	*Parthia*	BbGc-47	1896	Paddle steamer
Garden Island 2	*Rideau King*	BbGc-48	1893	Screw steamer
Garden Island 6	*Chieftain*	BbGc-52		Paddle steamer
Garden Island 7 *D.D. Calvin*		BbGc-10	1883	Screw steamer
Garden Island 12	*Hercules*	BbGc-57	1857	Paddle steamer
Garden Island 13	*Highlander*	BbGc-58	1850	Paddle steamer
Garden Island 14	*William IV*	BbGc-59	1831	Paddle steamer
Garden Island 19	*Denmark*	BbGc-64	1867	Schooner
Frontenac		BaGd-7	1901	Screw tug
George A. Marsh		BaGd-3	1882	Schooner
	Mapleglen	BaGd-8	1887	Screw steamer
Morton's Wharf		BbGd-18	1831	
Munson		BbGd-3		Dredge
Olive Branch		AlGe-2	1871	Schooner
Fort Henry Ordnance Wharf		BbGc-69	1815	
R.H. Rae		AlGf-6	1857	Barque
H.M.S. *St. Lawrence*		BbGd-6	1814	Warship
William Jamieson		BaGe-4	1878	Schooner
William Johnston		BaGd-9	1878	Screw tug

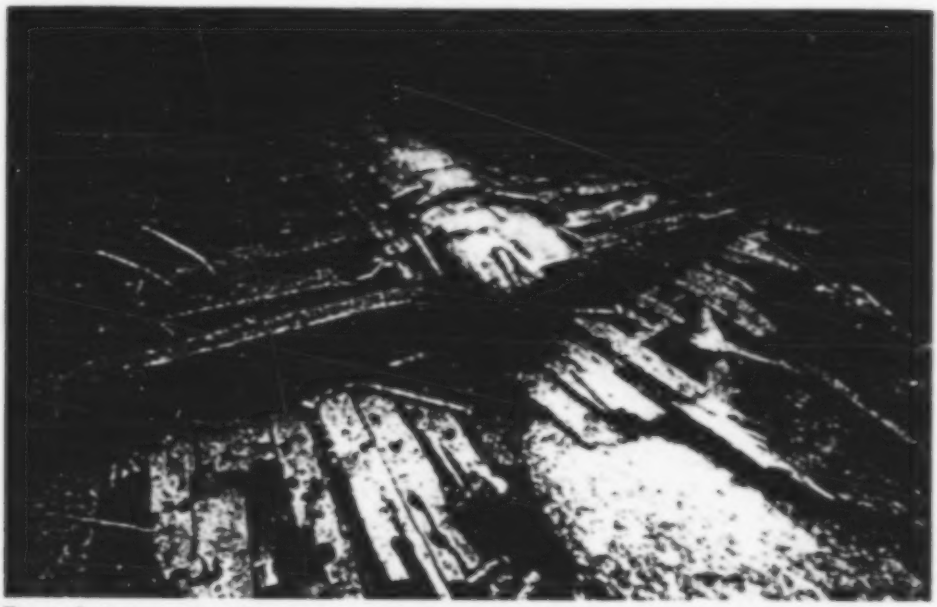

Figure 2. The lower hull of William IV, facing south towards Garden Island. The oldest known vessel in the graveyard, only the lower-most section of the hull survives. Photo by Jonathan Moore.

Québec for export to Europe. The shallow water of the bay was crammed with timber rafts, vessels unloading timber, cribs, and piers. A fleet of derelict and abandonedvessels also accumulated in and around the Back Bay. Typically, these were worn-out vessels from the fleet (*e g. Parthia*), others collected from sundry salvage jobs, some which accidentally burned (*e.g. D.D. Calvin, Hercules, Highlander*), and others which had been positioned to act as breakwaters (*e.g. William IV, Denmark*).

Previous archaeological work at Garden Island was restricted to a survey of the *D.D. Calvin* by P.O.W. in the early 1980's. In order to target sites for photography during the P.O.W. Photo Project, an inventory survey was undertaken in 1996. Due to the shallow depth of the Back Bay, air photographs were first taken to identify the general location of vessel remains, twenty-three of which were later pinpointed and buoyed by snorkellers. Again, due to the shallow water depth (no deeper than about 10 feet) the ends of each vessel were surveyed by standard plane survey methods, employing a shore-based E.D.M.; the E.D.M. reflector was positioned on the survey targets by a snorkeller escorted by an inflatable boat. This assemblage includes both sail and steam-propelled vessels, and historical research has led to the provisional identification by name of some of the vessels. The *D.D. Calvin*, which burned at the island in 1910, is the best surviving hull in the graveyard, intact almost to lower deck level from stem to stern post. The majority of the vessels survive at most to the turn of the bilge, and many do not survive for their entire original length. The myriad cribs and pier remains in the Back Bay were

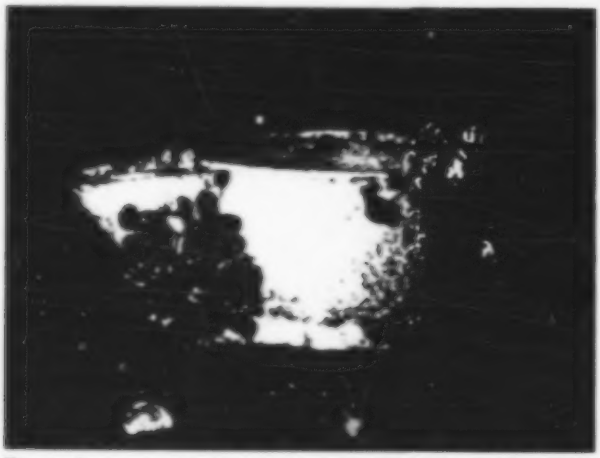

Figure 3. An enamelware spouted cup on the deck of the schooner City of Sheboygan, which sank off Amherst Island in 1915, is gradually disguised by mussels. Photo by Jonathan Moore.

not surveyed, but the submerged marine railway on the north side of the island was located.

The results of the inventory and position fixing survey at Garden Island are found in Figure 1. The Back Bay is home to probably the most concentrated assemblage of nineteenth century ship remains in Ontario. Examination of the distribution of the vessels demonstrates that their deposition was not random. In 1858 *William IV* was deliberately positioned on the west side of the marine railway on the north side of the island, to act as a breakwater, and was later accompanied by another vessel. Along the same lines, other vessels were deliberately sunk in such a way to augment the natural shelter afforded the Back Bay by Garden Island; ten vessels were positioned off Pea Point to form a rudimentary breakwater, which the author has named the Pea Point Breakwater.

CONCLUSIONS

The P.O.W. Photo Project has demonstrated that the collection of photographs from existing collections and filling-in gaps from those collections with fieldwork is a relatively inexpensive but effective method for recording sites threatened by, or subjected to mussel coverage. Combined with cataloguing and archival storage, it is also an effective method for mitigating the loss of archaeological information obscured by mussel coverage. Many of the deeper sites in the Kingston area have not been completely covered by mussels, and it is anticipated that P.O.W. will continue to collect photographs of these sites.

Mussel coverage is not irreversible, but the dilemma we face is that their removal is extremely time-consuming, and a potentially destructive process to the surfaces from which they are cleared. With no end in sight of the rapid spread of the mussels throughout the lakes, rivers, and minor water bodies of Ontario, mussel removal from underwater archaeological sites for the benefit of

archaeological recording will, in future, be a necessary and unavoidable evil. The recording of sites prior to complete. infestationand the preservation of existing photographs therefore stands out as the preferred method of recording.

Many underwater sites in Ontario, particularly shipwrecks, have already been photographed, but the vast majority of the resulting photographs are in private collections, which are often closely guarded. Where will these photographs be in ten, twenty, or even one hundred years, and how many will have found their way into public collections? If we do not collect, catalogue, and archive photographs of Ontario's underwater archaeological sites, we are in jeopardy of losing the sites not only to zebra and quagga mussels, but also to the dispersal of a rich photographic record over time.

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